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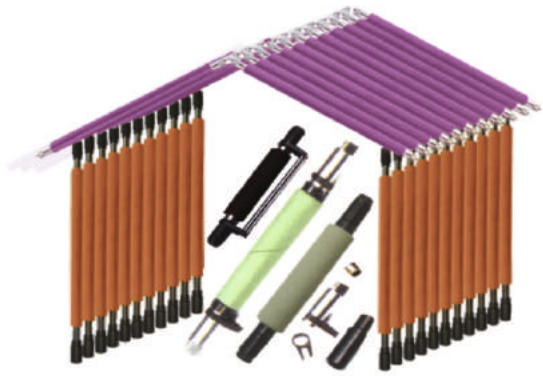

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EDITORIAL

In the Union Budge for 2021-22 manufacturing and health sector focused ignoring individual wants

The Budget for 2021-22 was significant because it was presented in parliament in post Lockdown period, human kind has ever faced such prolonged Lockdown before. Finance minister, Nirmala Sitaraman presented the union budget on 01.02.2021 with an expansionary view focusing on infrastructure and health care. Individual benefit has not been given in this budget as there is no direct support for middle class people who play major role in boosting up economy. No tax-relief was given in this budget, but there was some relief as the budget refrained from levying a COVID-19 cess or surcharge.

There were important announcements in this budget on the infrastructure such as the establishment of a Development Finance Institution (DFI) to boost long-term financing for country's infrastructure sector. Direct succour for some of sectors and sections worst-affected by the pandemic may be short, but Modi-govt. is betting on a real GDP growth of 10-10.5% in the coming year after the estimated 7.7% decline in 2020-21. It is expected to ride on multiplier effect of infrastructure spending which would spur demand and job creation. Finance minister targeted a fiscal deficit to 6.8% of the GDP, with gross market borrowing of about Rs. 12 lakh crores, but analysts say achieving disinvestment and non-tax revenue will be critical to meet the deficit target.

One of the important announcements in this budget is to achieve 1.75lakh crore divestment target which is possible by divestment of two PSBs and one general insurer. FDI in insurance sector will be increased to 74% from 49%. In this budget textile sector got addressed considerably with the announcement of finance minister in the proposal of a levy of 10% custom duty on cotton and an increase in the custom duty on raw silk and silk yarn from 10-15% to benefit farmers. In a move to rationalise duties on raw material inputs for manmade textiles, the budget proposed to bring nylon chain on a par with polyester and other man-made fibres by reducing the basic custom duties on caprolactam, nylon chips, nylon fibre and yarn to 5%. Finance minister also announced Mega Investment Textile Park would be setup with plug and play facilities. As many as 7 parks will be established in 3 years. But levy on raw cotton inputs would increase domestic cotton prices which would cast adverse impact on the entire value addition chain. We expect these decisive moves taken in this budget would push up economic growth to a higher trajectory in near future.

US economy shrinks 3.5% in 2020; worst show since WWII

The US economy contracted at its sharpest pace since World War Two (WWII) in 2020 as Covid-19 ravaged services businesses like restaurants and airlines, throwing millions of Americans out of work and into poverty. The Commerce Department's snapshot of fourth-quarter gross domestic product recently also showed the recovery from the pandemic losing steam as the year wound down amid a resurgence in coronavirus infections and exhaustion of nearly $3 trillion in relief money from the government. President Joe Biden has unveiled a recovery plan worth $1.9 trillion, and could use the GDP report to lean on some lawmakers who have balked at the price tag soon after the government provided nearly $900 billion in additional stimulus at the end of December. The economy contracted 3.5 per cent in 2020, the worst performance since 1946. That followed 2.2 per cent growth in 2019 and was the first annual decline in GDP since the 2007-09 Great Recession. The economy plunged into recession last February in the fourth quarter, GDP increased at a 4.0 per cent annualised rate as the virus and lack of another spending package curtailed consumer spending, and partially overshadowed robust manufacturing and the housing market. GDP growth for the last quarter was in line with forecasts in a *Reuters* poll of economists. The big step-back after a historic 33.4 per cent growth pace in the July-September period left GDP well below its level at the end of 2019. With the virus not yet under control, economists are expecting growth to further slow down in the first quarter of 2021, before regaining speed by summer as the additional stimulus kicks in and more Americans get vaccinated. ❐

China overtook US as EU's biggest trade partner

China last year overtook the United States as the EU's biggest trading partner, the EU statistics agency Eurostat said recently. According the news agency AFP, Britain which is no longer part of the European Union, was the third-largest trading partner for the bloc, behind China and the United States, the agency said. The supremacy of China came after it suffered from the coronavirus pandemic during the first quarter but recovered vigorously with consumption even exceeding its level of a year ago at the end of 2020, AFP said. This helped drive sales of European products, particularly in the automobile and luxury goods sectors, while China's exports to Europe benefited from strong demand for medical equipment and electronics. The dethroning of the US comes as the EU and China are seeking to ratify a long-negotiated investment deal that would give European companies better access to the Chinese market. Eurostat said the trade volume with China reached €586 billion ($711 billion) in 2020, compared to €555 billion ($673 billion) for the US, the news agency said. The agency said EU exports rose by 2.2 per cent to 202.5 billion euros while at the same time, imports from the People's Republic of China increased by 5.6 percent to €383.5 billion. EU exports to the United States fell by 13.2 per cent in the same period and imports by 8.2 per cent. In addition to the Covid-19 crisis, transatlantic trade has been impaired by a series of tit-for-tat feuds that have resulted with tariffs being on steel and products such as French champagne or Harley-Davidson motorcycles. Eurostat said trade with the UK plummeted in 2020, the year Britain officially left the bloc, though it was in a transition period to blunt the effects of Brexit until December 31. EU exports to the UK fell by 13.2 per cent, while imports from across the channel dropped by 13.9 per cent, Eurostat said. ❐

UK economy hit by biggest drop since 1709

The British economy suffered its biggest delcine in more than 300 years in 2020 as the coronavirus pandemic closed shops and restaurants, devastated the travel industry and curtailed manufacturing. The economy shrank 9.9% last year, more than twice the figure for 2009 at the height of the global financial crisis, the Office for National Statistics said of late. The drop is the largest since 1709, when a cold spell known as the Great Frost devastated what was then a largely agricultural economy. The data comes as Britain's economy remains shackled by restrictions designed to combat Covid-19. A rebound in growth during the fourth quarter

has been stifled by England's third lockdown, which has closed schools, restaurants and non-essential shops since mid-December. Tough restrictions also remain in place in Northern Ireland, Scotland and Wales. "Today's figures show that the economy has experienced a serious shock as a result of the pandemic, which has been felt by countries around the world," the UK's top treasury official, Chancellor Rishi Sunak, said in a statement. "While there are some positive signs of the economy's resilience over the winter, we know that the current lockdown continues to have a significant impact on many people and businesses." Sunak said he would announce new plans to protect jobs and bolster the economy when he delivers his annual budget statement to the House of Commons on March 3. Covid-19 has hit Britain's economy harder than most other industrialised democracies. French GDP shrank 8.3% last year, Germany 5% and the US 3.5%. The GDP figures show the breadth of the pandemic's economic impact in Britain. The service sector, which accounts for about 80% of the UK economy, shrank 8.9% last year, with output from accommodation, food and beverage businesses down more than 55% from February levels. Manufacturing fell 8.6% and construction 12.5%. ❐

China's factory recovery declines in January

China's factory activity grew at the slowest pace in five months in January, hit by a wave of domestic coronavirus infections, but still in line with the ongoing recovery in the world's second-largest economy. The official manufacturing Purchasing Manager's Index (PMI) fell to 51.3 in January from 51.9 in December, the National Bureau of Statistics said in a statement of late. It remained above the 50-point mark that separates growth from contraction on a monthly basis, but was below the 51.6 expected in a Reuters poll of analyst forecast. In January, mainland China reported more than 2,000 local cases of the coronavirus. While the number was small compared with other countries, authorities were concerned about transmission risks during the Lunar New Year travel rush—the world's biggest annual human migration spanning 40 days from January to February. During the month, several large cities were locked down with tens of millions tested for Covid-19, interrupting factory activity and weighing on the services sector, including logistics and transportation. "The recent localised epidemic has had a certain impact on the production and operation of some enterprises, and the overall expansion of the manufacturing industry has slowed," said Zhao Qinghe, an official at the statistics bureau. "The period before and after the Lunar New Year is also traditionally an off-season for the country's manufacturing industry," Zhao said in an accompanying statement. The new coronavirus outbreak, mostly in the north, is expected to be a temporary restraining factor while China's vast industrial sector continues to find strength in resilient export demand. The official PMI, which largely focuses on big and state-owned firms, showed the sub-index for new export orders stood at 50.2, expanding for the fifth straight month, though down from 51.3 in December. Economic indicators ranging from trade to producer prices all suggest a further pickup in the industrial sector. A sub-index for small firm activity stood at 49.4 in January, up from December's 48.8. China's gross domestic product grew 2.3% on year in 2020, making it the only major economy in the world to dodge a contraction last year as many nations struggled to contain the Covid-19 pandemic. ❐

Exports from UK to EU decline 68% since Brexit deal

Exports from Britain to the European Union fell by 68% in January as trade was disrupted after the end of a transition period following Britain's departure from the European Union, according to a trade body representing hauliers. The government did not confirm the data and said disruption at the border had been minimal since Britain completed its journey out of the EU's orbit at the of 2020 following an agreement on trading arrangements. Since the start of the year, businesses and hauliers have had to adapt to new trading arrangements, including new systems for companies and officials in the British province of Northern Ireland. ■

Core sector output declines 1.3% in December

The output of eight core infrastructure sectors contracted for the third month in a row by 1.3 per cent in December, dragged down by poor show by crude oil, natural gas, refinery products, fertiliser, steel and cement sectors. The core sectors had expanded by 3.1 per cent in December 2019, according to the provisional data released by the Commerce and Industry Ministry recently. Barring coal and electricity, all sectors recorded negative growth in December 2020. During April-December 2020-21, the sectors' output declined by 10.1 per cent against a growth rate of 0.6 per cent in the same period of the previous year. The output of crude oil, natural gas, refinery products, fertiliser, steel and cement declined by 3.6 per cent, 7.2 per cent, 2.8 per cent, 2.9 per cent, 2.7 per cent, and 9.7 per cent, respectively. The growth in coal production slowed down to 2.2 per cent in the month under review from 6.1 per cent in the same month last year. However, electricity output grew by 4.2 per cent in December 2020. The eight core industries constitute 40.27 per cent of the Index of Industrial Production. The government also revised core sector output data for September 2020 showing a growth rate of 0.6 per cent in the month against the earlier projection of 0.1 per cent contraction. Commenting on the data, ICRA Principal Economist Aditi Nayar said that discouragingly, the core index continued to contract for the third consecutive month in December 2020. "Based on the plateau in the core sector data, juxtaposed with the uptick in auto production trends and recovery in non-oil merchandise exports, we expected the IIP to rebound to a modest growth of 0.5-1.5 per cent in December 2020, trailing the level seen in October 2020," she said. ❐

PERFORMANCE OF EIGHT CORE INDUSTRIES

Growth rates (in %)

Sector	Coal	Cruide oil	Natural gas	Refinery products	Fertilisers	Steel	Cement	Electricity	Overall growth
Weight	10.33	8.98	6.88	28.04	2.63	17.92	5.37	19.85	100
Dec '19	6.1	–7.4	–9.2	3	10.2	8.7	5.5	–0.02	3.1
Jan '20	8	–5.3	–9	1.9	–0.1	1.6	5.1	3.2	2.2
Feb '20	11.3	–6.4	–9.6	7.4	2.9	2.9	7.8	11.5	6.4
Mar '20	4	–5.5	–15.1	–0.5	–11.9	–21.9	–25.1	–8.2	–8.6
Apr '20	–15.5	–6.4	–19.9	–24.2	–4.5	–82.8	–85.2	–22.9	–37.9
May '20	–14	–7.1	–16.8	–21.3	7.5	–40.4	–21.4	–14.8	–21.4
Jun '20	–15.5	–6	–12	–8.9	4.2	–23.2	–6.8	–10	–12.4
Jul '20	–5.7	–4.9	–10.2	–13.9	6.9	–6.5	–13.5	–2.4	–7.6
Aug '20	3.6	–6.3	–9.5	–19.1	7.3	0.5	–14.5	–1.8	–6.9
Sep '20	21	–6	–10.6	–9.5	–0.3	6.2	–3.4	4.8	0.6
Oct '20	11.7	–6.2	–8.6	–17	6.3	4	3.2	11.2	–0.9
Nov '20*	3.3	–4.9	–9.3	–4.8	1.6	–0.5	–7.3	3.5	–1.4
Dec' 20*	2.2	–3.6	–7.2	–2.8	–2.9	–2.7	–9.7	4.2	–1.3

*provisional

FDI grew 13% in 2020; global inflow sinks to 1990s lows

Boosted by investments in the digital sector, foreign direct investment (FDI) in India grew 13% to $57 billion in 2020, the United Nations Conference on Trade and Development (UNCTAD) said in its 'investment trends monitor's report even as the global inflows plummented 42% compared to 2019. "India, another major emerging economy, also recorded positive growth (13%), boosted by investments in the digital sector," it said in its preliminary estimates for 2020. China was the world's largest FDI recipient, with flows to the Asian giant rising by 4% to $163 billion, according to UNCTAD. As per official data, FDI equity inflows into India grew 21% to $35.33 billion

in the April-October period of fiscal 2021 from $29.31 billion a year earlier. Global FDI collapsed in 2020 in an estimated $859 billion from $1.5 trillion in 2019. "Such a low level was last seen in the 1990s and is more than 30% below the investment trough that followed the 2008-2009 global financial crisis," UNCTAD said. As per the Geneva-based organisation, India and Turkey are attracting record numbers of deals in IT consulting and digital sectors, including e-commerce platforms, data processing services and digital payments. Indian IT companies have announced a 30% increase in acquisitions, targeting European and other markets for information technology services. Attributing the rise in investments in the digital economy to acquisitions, UNCTAD said that cross-border M&A sales grew 87% to $23 billion. "A notable deal was the acquisition of 10% of Jio Platforms, by Jaadhu, owned by Facebook (US) valued at $5.7 billion," it said, adding that infrastructure and energy deals also propped up M&A values in India. FDI in South Asia rose by 10% to $65 billion. Going ahead, despite projections for the global economy to recover in 2021—albeit hesitant and uneven—UNCTAD expects FDI flows to remain weak due to uncertainty over the evolution of the Covid-19 pandemic. ❐

Exports grow 6% imports rise 2% in January; trade deficit getting lowered

Exports of goods posted a growth of 6.16 per cent to $27.45 billion in January 2021 (year-on-year), raising expectations of improved performance in the last quarter of the on-going ficsal propped by engineering goods, pharmaceuticals, iron ore and electronic goods. Imports increased 2.03 per cent to $41.99 billion during the month with imports of gold rising 154.7 per cent to $4.03 billion and electronics and pearls & precious stones rising as well, but a significant fall in petroleum imports neutralised much of the rise, as per quick estimates released by the Commerce & Industry Ministry recently. Trade deficit in January 2021 shrunk to $14.54 billion from $15.3 billion in January 2020. Non-petroleum, non-gems and jewellery exports in January posted a higher growth of 13.4 per cent at $22.44 billion. Non-oil and non-gold imports in January were at $28.55 billion registering a growth of 7.5 per cent. "The trade data for January continues to give positive hopes with both exports and imports continuing their growth trends for the second consecutive month," said Prahalathan Iyer, Chief General Manager, Research & Analysis, India Exim Bank. Exports during the April-January 2020-21 period declined 13.58 per cent to $228.25 billion while imports during the period declined 25.92 per cent to $300.26 billion. Trade deficit in the first ten months of the fiscal halved to $72.01 billion compared to $141.21 billion in the same period in the previous fiscal. "January exports also signal that our traditional and labour-intensive sectors of exports have already passed the most challenging and testing times," said S Saraf, President, Fieo. He added that the government should soon notify the rates for the new RoDTEP scheme, which will remove uncertainty from exporters and help them forge new contracts. ❐

Double Boost : December Factory output rose, January retail inflation at 16-month low

India's industrial production rose 1.04% in December, reversing the previous month's contraction and regaining pre-Covid levels, while consumer inflation eased to a 16-month low—twin respite for the economy. Consumer inflation dropped to 4.06% in January from 4.59% in December, data released by the statistics office showed recently. The declining inflation will allow the central bank to keep interest rates low to support the economic recovery that is underway, though experts ruled out more rate cuts. "There is some comfort in both the IIP (Index of Industrial Production) growth number and CPI (consumer price index) inflation for December and January respectively," said Madan Sabnavis, chief economist at CARE Ratings. The statistics office has projected GDP to contract 7.7% in FY21. Industrial recovery IIP touched 135.9 in December, rising above the pre-Covid, February 2020 level of 134.2. However, sectoral classification shows a patchy recovery with many segments still struggling. Fourteen of 23 manufacturing subsectors reported a contraction in December. Manufacturing and electricity grew 1.6% and 5.1%, respectively, while mining contracted 4.8% in December. Capital goods-an indicator of investment-grew 0.6% in December. Consumer durables production, an indicator of urban demand, witnessed the sharpest growth of 4.9% while consumer non-durables expanded 2%. ■

Okhla MSMEs back in action ; garment units yet to recover

A year ago, the Covid-induced lockdown had a severe impact on the factories in Delhi's Okhla industrial area. Barring those catering to essential services, all other factories were shut, many labourers fled to their hometowns, and those who remained were left without any salary or the assurance of retaining their jobs.

But the days of empty roads, dusty, vacant trucks and desolate labour colonies are now over, and the Okhla industrial area is back in action. The roads are lined with freight carriers, crowds throng the street food vendors, and the hum of the factories is back.

According to the 2019-20 annual report of the Ministry of Micro, Small, and Medium Enterprises (MSME), there are close to 936,000 registered MSMEs in Delhi, employing nearly 2.3 million skilled and semi-skilled workers.

Okhla is, in a sense, a confluence of MSMEs producing plastic products, garments, textiles, electric equipment, chemicals and synthetics, among others. The area is also slowly becoming a hub for start-ups such as renewable energy companies, electric vehicle makers, and so on.

"April 2020 was a bad month. Post that, the recovery has been gradual," says Vikram Bhadauria, managing director, Alok Masterbatches, a plastic material company. "We opened up much before others as we were essential services. Our top line has grown, but the bottom line has been severely hit as input prices, freight, logistics and export costs have gone up."

Bhadauria says his factories in Delhi and in three other states opened by the end of April last year as they supplied plastic packaging to the medical industry. "Our export is still facing issues as freight costs have gone up due to container shortage. The phased lockdown across the world has impacted logistics globally," says Bhadauria, who exports to Southeast Asia and European markets.

Export logistics are troubling several industries. While some are facing container shortages, others are looking at increased freight costs in their key markets. "For shorter distances, the cost is higher now. From $200-$250 per unit, the cost of transporting has gone up to $800-$1000 per unit," says Anil Gupta, chairman and managing director, KEI Industries Limited, an electric cable and wire maker.

Bhadauria says his company expects to reach pre-Covid growth levels in another three to four quarters. However, ramping up growth above pre-Covid levels looks remote at this point.

Okhla's electrical equipment industry is looking at a similar growth trajectory. The sector is also hopeful of the government's boost to domestic manufacturing under the initiative of Atmanirbhar Bharat. Close to 70 per cent of the electric equipment industry comprises MSMEs.

"We are expecting a lot of demand in the coming six months as the infrastructure projects announced by the government start getting implemented. With infra projects, the demand for sectors such as cement, electric equipment, steel etcetera also goes up," says Gupta. "The more the government spends on or awards infrastructure projects, the more growth allied sectors will witness."

Not all are so hopeful, though. Garment and textile factories are still in the throes of losses and have a bleak future outlook.

With order coming to a halt from May 2020 till at least September, Okhla's garment industry had to sell rejected products at 10 per cent of the price, says Anil Varma of Monica Garments in Okhla Phase-II. Varma is also the head of the Apparel Exporters Association.

"First, the buyers stopped the payment, which led to a standstill in manufacturing. And then, future orders were stopped. The industry is suffering massive losses. Many of the exporters declared bankruptcy after orders were cancelled by leading clothing brands," says Varma.

While in other sectors China's manufacturing prowess eclipses the growth of Indian manufacturers, for the garment industry, it is Bangladesh that overshadows India.

"We are in a hand-to-mouth situation. The garment industry is one of the largest employers in the country. Forex and imports are rising in the industry, while the traditional Indian textile industry is on a decline — be it leather, handicraft, and so on," says Varma. "We have been hearing about textile parks announced by the Centre, but not much has materialised. Ideally, the government should support the domestic industry and de-incentivise imports."

Though the industry is still counting its losses, there is a glimmer of recovery. Many of the migrant labour are back and Okhla's labour colonies are bustling with people again. As are the factory floors, though the working style is different now, what with the masks and social distancing. Several factory owners have tried to maintain the same staff strength as before, while operating different shifts to ensure social distancing.

"As long as I have a job, everything is manageable," says a worker at a factory in Okhla Phase-I. The others around him agree, but also point out that in some cases, wages have fallen or the shift system is proving to be difficult. But for small industries and daily-wage earners, the mantra today seems to be — something is better than nothing.

Textile parks may attract Rs. 5,000-crore investment

Large apparel manufacturers may consider investing in the seven textile parks proposed in the Union Budget on 1.2.21. Finance Minister Nirmala Sitharaman said textiles were a champion sector under the government's Make in India programme.

The parks, to be set up over 1,000 acres of land in three years, will be in addition to the ₹10,683-crore production linked incentive (PLI) scheme for technical textiles and manmade fibre announced earlier.

Industry experts and executives Business Standard spoke to said that up to ₹5,000 crore could be pumped in by large garment manufacturers and exporters, keen to take advantage of the tax sops and benefits that the parks will provide.

The buzz is that players such as Arvind, Aditya Birla Fashion, Future Enterprises, and exporters such as Gokaldas Exports could consider investing in the proposed mega parks, which will have world-class infrastructure, uninterrupted water and power supply, among other facilities.

Such parks exist in countries like China and Vietnam, where the entire value chain is covered under one roof.

"These parks could encourage the scale of production that the domestic industry lacks," Rahul Mehta, director, Creative Group, a Mumbai-based garment manufacturer, said. Mehta is also the past president of the Clothing Manufacturers Association of India (CMAI), which has made many representations to the government to introduce global standards in the domestic industry.

While India exports around $16 billion worth of textiles annually, the market has largely remained stagnant as countries like Bangladesh and Vietnam intensified competition. Though foreign apparel brands such as Zara, H&M, Marks & Spencer, and Uniqlo have launched in India over the last few years, many continue to import apparels from Bangladesh and sell them in India as part of a free-trade agreement between the two nations.

A Sakthivel, chairman Apparel Export Promotion Council, said he expected foreign direct investment (FDI) into the parks as international brands look at India as an export hub.

Raja Shanmugham, president, Tiruppur Exports Association, said the mega parks would help the industry become globally competitive. "Foreign companies, large local players, including some cash-rich medium-sized units could set up their units within the parks," he said.

Some experts, however, argue that the concept of textile parks is not new in India.

Over 50 such parks were sanctioned under the earlier Scheme for Integrated Textile Parks (SITP), which was launched 15 years ago. But administrative delays ensured that the scheme remained mostly on paper. ■

Jute Commissioner curbs stock limit for mills to reduce raw jute prices

Jute mills will now require to hold raw jute stocks only up to a specified limit, that the office of the jute commissioner has fixed, to keep prices under control so that the Centre's subsidy payout remains under check. The Centre has to bear 100% subsidy for procuring jute bags required for stocking foodgrains. Increase in raw jute prices effects in increase of jute bag prices and therefore the Centre's subsidy burden escalates.

The Jute Commissioner's (JC) office has issued an order wherein it has specified the stock limit for each and every jute mill of the country's 72 operational jute mills at present. The JC has asked the jute mills to file weekly stock returns instead of monthly stock returns to prevent brisk buying, often imbalancing the demand suptuation, thereby escalating raw jute prices.

Deputy Jute Commissioner Koushik Chakraborty told recently that raw jute price came below ₹6,000 per quintal after the JC's office conducted raids and seized hoarded stocks from a section of jute traders. But prices have again started increasing and have gone beyond ₹6,000 per quintal, prompting the JC to take curbing measures. Raw jute average prices as on January 21, has shot up to ₹6,150 per quintal and this has happened since a handful of jute mills have indulged in brisk buying.

"To prevent over stocking we have brought in the order, valid up to July this year or until further orders, which ever is earlier," Chakraborty said, adding that stock limit for each jute mill is in varying quantity because of various factors taken into consideration such as production capacity of a jute mill, raw jute stock of a jute mill during the six months period last year, stock during the six months period preceding the date of the order and such others enumerated in the Jute & Jute Textile Control Order (JJTCO)-2016.

The order says, if a "jute mill is already holding raw jute above the specified limit, the jute mill is directed to totally suspend new purchases or execute new contract till the time it's stock comes down to the specified limit".

Violation of this order would attract imprisonment or fine under clause 11 of the JJTCO-2016. ■

Textile Ministry likely to impose caps to ensure better distribution

The Textile Ministry is likely to impose caps on the incentive that can be claimed by a company under the Production Linked Incentive (PLI) scheme for man-made fibre and technical textiles to ensure that big players do not corner a large part of the funds, according to sources.

"A cap on the maximum amount that can be claimed under the PLI scheme by a textile company is likely to be put in place so that a big player can't take most of the amount that has been earmarked for the sector and there is a more even distribution," a person tracking the matter told recently.

The PLI scheme was launched for 10 sectors in November 2011 to promote domestic manufacturing by providing financial incentives on incremental turnover for five years. The textile sector has been allocated ₹10,683 crore under the scheme which, the Ministry has decided, will be offered for incremental production in 40 identified man-made fibre items and 10 technical textiles products.

"The 40 MMF lines identified for the PLI push are the ones where India's share in world market is negligible while the 10 technical textile products are the top globally traded lines," the source said. As soon as the Union Cabinet approves the PLI scheme for the textile sector, which is in the last stages of discussion and finalisation, it will be notified by the Textiles Ministry and the modules for registering interested players will be made, the source said.

According to sources in the industry who have been part of the government's discussion on the contours of the PLI scheme, the incentive rates offered for the textiles sector is one of the highest (compared to other sectors). It is likely to be fixed at 9 per cent of turnover in the first year for companies with a turnover between ₹100 crore and ₹500 crore and 7 per cent for those above that. In the subsequent four years it would keep tapering.

While the minimum turnover for eligibility under the scheme could be ₹100 crore, it need not be for the specific item for which a company wants to claim PLI. "In case a textile company is presently engaged in production of cotton, woollen or jute products but wants to get into a technical textile item that is covered under the PLI scheme, it can be eligible if it meets the minimum turnover criteria through production of the other items. While the incremental production has to be of the item for which PLI is being claimed, the applicant has to maintain the level of turnover of the items it was originally manufacturing," the source said. To claim incentive under the PLI schemem, the industry will have to get registered with the government. "The eligibility is for both domestic sale and exports as restricting it to exports would make the scheme incompatible at the WTO," the official said.

Other sectors offered PLI incentives include pharmaceuticals, automobiles and auto components, specialty steel, capital goods, technology products, white goods (ACs and LEDs), telecom and networking products, high-efficiency solar PV modules and advanced battery cells. ■

Gujarat textile traders opt for section 138 of Negotiable Instrument Act to be stricter

Textile traders in Gujarat want stricter provision under Section 138 of Negotiable Instrument Act to safeguard themselves from the issues related to non-payment against their sold goods and cheque bounce.

Most of the business in textile markets is being done on long term credit and trust, says Gaurang Bhagat, president of Ahmedabad based New Cloth Market, "Since the outbreak of Covid, payments of more than ₹2,000 crore have been stuck. There have been a plethora of instances related to cheque bouncing. Due to Covid-19 courts are not working and hence cheque bouncing cases are not being disposed of expeditiously."

Bhagat who is also chairman of Gujarat Chamber of Commerce & Industry's (GCCI) trade committee further said that decision of arbitration should also be given importance for the speedy disposal of cases.

At present, Section 138 provides that when the cheque is dishonoured for insufficiency of funds or for any of the prescribed reasons, the one who is at defaulter can be punished with imprisonment for a term which may extend to two years, or with fine which may extend to twice the amount of the cheque, or both. "The textile traders in the state want a minimum punishment of six years under the act. In over 90% cases, MSMEs are becoming victoms of delayed or non payments. Bigger companies generally dominate payment terms in their favour," he said.

After agriculture, textiel sector is the second largest employer in the country, says Ashok Jirawala, president of The Federation of Gujarat Weavers Association adding that textile industry is flourishing because of MSMEs and they need to be protected as it is difficult to do business without giving credit.

"There are more than 300 textile markets in Surat alone. Thousands of traders in these markets are doing business across the country. Due to Covid, many of them suffered issues related to delay in payments as well as cheque bouncing. Stricter provision under the act would make the entire business cycle clean and transparent," said Dev Kishan Mangani, chairman, textile Committee of South Gujarat Chamber of Commerce & Industry. ■

Apparel sector has not yet reached to pre-covid-19 levels

Samsung, Apple, Diageo, Whirlpool, Levi's, Mondelez Kimberly-Clark and other global consumer giants said India sales recovered sharply in the last quarter, largely driven by premium products.

Senior management of these multinational companies said in quarterly earnings calls that pricier products also helped margin expansion in India during the quarter, indicating a recovery in discretionary consumer spending that coincided with the festive season.

Most of these companies operate in discretionary categories such as consumer electronics, liquor, apparel, snacks staples. "Flexible peak season promotions and premium product sales drove profit higher than last year, in both advanced and emerging markets, including India and Latin America," Samsung Electronics said recently in its earnings release.

The South Korean company said India revenue growth was partly attributable to consumers staying put at home.

Apple chief executive officer Tim Cook said recently that India business doubled in the December quarter over the previous year. The iPhone maker launched its company-owned online store in India during the last quarter. The store got a "great reaction... and has helped us achieve the results that we got to last quarter," he said.

American appliance maker Whirlpool Corporation CFO Jim Peters said the company reported "strong year-over-year net sales growth, driven by demand recovery" in India with the company expecting to gain share in 2021.

The Economic Survey released of late said India's GDP will decline 7.7% in the current fiscal but projected 11% growth in FY22 on the back of the Covid-19 vaccination drive and a rebound in consumer demand.

While consumer goods and electronics have recovered fully, with sales growth even outpacing pre-Covid levels since two quarters ago, apparel and liquor companies have started to see demand revival since November mostly due to the festive season. The recovery is led by premium sub-segments.

For instance, Diageo said Indians who bought scotch from duty free shops earlier are now buying more from the domestic market.

"Within our portfolio, our scotch whisky brands like Johnnie Walker, which you know has high duty and high priced, actually did the best. We had strong performance in brands like Johnnie Walker in India. So the premiumisation trend in India is strong," Diageo CEO Ivan Menezes told investors.

The apparel segment has still not reached pre-Covid-19 levels in terms of sales and companies expect normalcy only by the next fiscal year.

Fast fashion brand Hennes & Mauritz said it grew 19% during the quarter ended November, even as its full-year sales shrank 17%. Denim maker Levi's Strauss & Co said India grew double-digits in Decembr but full-quarter numbers declined.

"Direct-to-consumer returned to growth versus prior year with China and India both growing double-digits in December as the changes that were made to the store fleet are starting to pay back, Levi's chief financial officer Harmit Singh told investors. For global firms, India has been outperforming other emerging markets to become a growth bastion as they largely struggled in Europe and the US.

Kimberly-Clerk, the makers of Huggies diapers, said personal-care sales are up in double digits in China and India, compared with single digits in the US, Latin America and Eastern Europe. Snack company Mondelez International reported growth of more than 10% in India in the last quarter, more than that of Brazil and China. Mondelez International chief financial officer Luca Zaramella said India grew in the low single digits in 2020 after a double-digit decline in the second quarter as a result of Covid curbs. ■

DESIGNING AND DEVELOPMENT OF SUSTAINABLE FASHION LOGO-PATCH-WORK TOTE BAGS

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ABSTRACT

Plastic pollution has become a serious environmental issue. Consistently accumulating mountains of disposable plastic waste poses a challenge to the world. Pre-consumer waste is the reintroduction of manufacturing scrap back into the manufacturing process. In the present study the respondents belonged to various age groups. All the respondents were from Jalandhar city and its adjoining villages. 10 original designs were developed by using CAD software i.e., coral draw. The pre-consumer textile waste was collected from boutiques of Jalandhar and adjoining villages. Then from this waste, bags were developed under two categories i.e., vegetable bags and grocery bags. The size of both bags was 16"×17". Different techniques were used to embellish them i.e., fabric painting, patchwork and couching. The estimation of cost of these tote bags was done. Then to check the consumer acceptability of these bags a questionnaire was developed and administered to 50 respondents selected from Jalandhar district by purposive random sampling. Data obtained from the survey was coded, tabulated and expressed in frequency and percentage. The percentage was calculated to find out the acceptability of the bags. 100% of the respondents found the vegetable bag to be a good substitute for plastic bags. 100% of the respondents found the vegetable bag pockets being appropriate for intended use and some respondents offered suggestions like the size of the vegetable bag should be increased and avoiding the use of white fabric. Possibility of using these bags in multiple end uses was explored. This suggestion was fruitful with a meaningful outcome.

Keywords : Eco-fashion, Patch-work, Plastic pollution, Pre-consumer waste, Sustainability.

Introduction

1.1a : What is Plastic Pollution?

Plastic pollution has become one of the most pressing environmental issues, as rapidly increasing production of disposable plastic products overwhelms the world's ability to deal with them. Plastic pollution is most visible in developing Asian and African nations, where garbage collection systems are often inefficient or nonexistent. (Parker, 2019).

1.1 b : Damaging Impact on Environment due to use of Plastic Bags

People are using plastic bags, which are environmentally dangerous products, for their daily needs mainly for shopping purposes as a result of which, the environment and agricultural lands are thereby being polluted. (Jalil, Mianand and Rahman, 2013)

1.2 : What is Sustainable Fashion ?

Sustainable fashion is the movement and process of creating clothes, shoes, accessories and other textiles through sustainable practices that take into account environmental, social and economic implications. Therefore, sustainable fashion looks beyond product and fabric waste, taking instead a holistic approach to fashion and its interactions with all other systems - social, cultural, ecological and financial. As such, sustainable fashion considers not only users and producers but all living species, present and future generations.(Gongini, 2017)

1.3 : What is Eco - Fashion ?

Eco is short for ecology, or the study of interactions between organisms and their environment. Eco-fashion is any brand or line that attempts to minimize the impact on the environment, and often the health of the consumers and the working conditions for the people that are making the clothes. (Sunday, 2016) Many responsible citizens pride themselves in wearing their values on their sleeves by purchasing environmentally friendly clothes. (Brookbanks, 2011)

1.4 : What is Slow Fashion ?

Slow fashion is the deliberate choice to buy better-quality items less often. When purchases are made, they're environmentally and ethically conscious rather than trend-driven. The garments are durable and lend themselves to repairs, not disposal. Slow fashion is also transparent : Buyers know where their clothes are coming from, and items are often handmade by artisans. (Milnes, 2015)

1.5 : What is Fast Fashion?

Fast fashion can be defined as a cheap, trendy clothing, that samples ideas from the catwalk or celebrity culture and turns them into garments in high street stores at breakneck speed. (Rauturier, 2018) Fast fashion is the term used to describe clothing designs that move quickly from the catwalk

to stores to meet new trends. The collections are often based on designs presented at fashion week events.(Kenton, 2019)

1.6a : What is a Carbon Footprint?

Carbon footprint is the overall amount of greenhouse gas emissions, consisting primarily of carbon dioxide, associated with an organization, event or production. It is one of the most

common measures of the effect of an individual, community, industry, or country on the environment. (Spelch, 2016)

1.6b : Carbon Footprint Reduction

Carbon footprints can be reduced through improving energy efficiency and changing lifestyles and purchasing habits. Switching one's energy and transportation use can have an impact on primary carbon footprints. For example, using public transportation, such as buses and trains, reduces an individual's carbon footprint when compared with driving. (Selin, 2020)

1.8a : Fabric Painting

Fabric paints are a permanent way to colour fabrics. They can be mixed to create new shades or we used straight from the pot, but it's best not to dilute them as you would water-based paints, and this reduces the pigmentation. (Ling, 2014)

1.8b : Colour

We live in a world of colour According to the various researches, the colour that surrounds us in our daily lives has a profound effect on our mood and on our behaviour. A colour can change our mood from sad to happy, from confusion to intelligence, from fear to confidence. (Kurt and Osueke, 2014)

1.8c : Eco - Friendly Colours

Research has confirmed that green makes the consumer lean towards the assumption of a brand eco-friendliness. Going green is the most common slogan for the environment friendly branding after all. Blue is greener than green terms of conveying an impression of eco - friendliness, despite the frequent use of the word green to convey that idea. (Rabida, 2015)

1.9 : Patchwork

Patchwork, also called piecing, the process of joining strips, squares, triangles, hexagons, or other shaped pieces of fabric (also called patches), by either hand or machine stitching, into square blocks or other units. (Brick, n.d.)

1.10 : What is a Tote Bag ?

Tote bags are made from a variety of materials ranging from cloth to leather to plastics to even papers. Packaging is an important aspect of the products and tote bags are the kind of secondary packaging. They are the unfastened bags having parallel handles for convenient carrying.

Aims and Objectives of study

1. To rescue textile waste fabric from going to the landfills.
2. Create an awareness towards prevention of pollution caused by plastic bags and providing substitute sustainable cloth bags made from textile waste.
3. To create eco-friendly sustainable logos by using coral draw.
4. Developing designs of tote bags with pre-consumer textile waste using the technique of patch-work.
5. To test the market acceptability of these bags.

Limitations of Study

For construction of bags only pre-consumer textile waste was used.

For testing of market acceptability only Jalandhar District was selected as locale.

Review of Literature

A review of related research serves an important purpose and helps the researcher at every step of his venture as a researcher to build appropriate methodology and design keeping in view the strength and failure of previous researchers. A review of literature provides useful hints for further research.

2.1 Patchwork

Debbabi , Sahnoun and Kordoghli , (2014) clearly depicted that clothing manufacture generates many kinds of wastes. The main purpose of this work was recycling fabric wastes. For this aim, they created new patchworks fabrics. Created patchworks were made using different sizes and shapes of patch templates. They also investigated three techniques for patchwork seaming. They have reported advantage of using large patches. However, small patches are appreciated to recover most quantity of wastes. In this study they have also anticipated the use of patchwork fabric in clothing design.

According to Badoe and Frimpongn, (2015) their work explored innovative techniques in printed textile design as means of introducing

creativity and providing new and varied ways of decorating textile materials. Art studio-based research design was used under which exploration and experimental methods were adopted in the execution of these works. Some innovative techniques applied were spray printing, sponge and broomsticks printing, twigs block printing, marble printing, bottle printing, brush printing, lace transfer and fabric painting.

METHODOLOGY

The methodology is the scientific way of conducting research so that the study is reliable and conducted with accuracy.

Section: 3.1 : Locale of The Study

Section: 3.2 : Designing Process

(a) Development of Sustainable Fashion Logos(SFL)

Section: 3.3 : Preparation of Products(BAGS)

3.3.1: Collection of raw material and sorting

3.3.2: Development of tote bags under two categories i.e., vegetable bags and grocery bags

3.3.3: Estimation and cutting/placement of fabric scraps

3.3.4: Attachment of pasting

3.3.5: Tracing of Logos and hand painting

3.3.6: Construction of tote bags and decoration with couching

3.3.7: Attachment of slings and tassels

3.3.8: Costing

Section: 3.4 : Techniques Used

3.4.1: Fabric painting

3.4.2: Patchwork

3.4.3: Couching

Section: 3.5 : Market Acceptability

3.5.1: Development of Questionnaire

3.5.2: Execution of Questionnaire

Section 3.6 : Results and analysis

3.1 : Locale of Study

The questionnaire-cum- interview schedule was administered to a mixed group of consumers of groceries and vegetables selected by purposive random sampling. The respondents belonged to various age groups i.e., elderly men and women, teenagers, middle-aged men and women. All the respondents were from Jalandhar city and its adjoining villages.

3.2 : Designing Process

(a) Development of sustainable Fashion Logos:

Available designs were searched on the internet, magazines, books to consider the availability of existing designs. 10 original designs were developed by using CAD Software i.e., Coral Draw 7 and Photoshop version 7.0.

3.3 : Preparing Products

3.3.1 : Collection of Raw Material and sorting

As per the principles of art and design, colour coding and sorting of textile waste was done. Various techniques were experimented with to create patchwork bags. Textile waste scraps (pre-consumer textile waste) were collected from boutiques of Jalandhar and adjoining villages.

3.3.2 : Development of tote bags under two categories i.e., vegetable bags and grocery bags

1. Vegetable bags: The size of vegetable bag was 16" x 17". Inside the vegetable bags, different pockets were attached with the inner lining as per the need of sorting various vegetables. Different sizes and shapes of pockets were made for the different vegetables so that polythene or other smaller bags were not needed and the vegetables do not mix into each other.

2. Grocery bag: The length and width of a grocery bag is also 16" x 17". In these bags plain lining from waste fabric was attached to finish the inner side and lining was attached such that seam allowances were not visible inside these bags.

3.3.3 : Estimation and cutting of fabric

To estimate the fabric required for each article the size of the bag was taken into account. Pieces were cut according to the bag measurement including seam allowances and bags were accordingly cut.

3.3.4 : Attachment of Pasting

After the estimation and cutting of the fabric according to the design, pasting was attached to all the pieces of the fabric by ironing.

3.3.5 : Tracing of logo and hand painting

After the pasting was attached to all the pieces of fabric then tracing of SFL was done with the help of yellow carbon paper. The portion selected for tracing the design was light so that the colour of the logo was clearly visible. The size of the said piece was also appropriate as per the logo. After the tracing painting was done with the help of acrylic colours and brushes.

3.3.6 : Construction of tote bags

The painted pieces were ready to be joined keeping the front and backside of the bag correctly. The lining was attached inside the bags and finishing was done.

3.3.7 : Attachment of slings and tassels

Slings were cut lengthwise and for some bags a braided sling was made, slings were then attached to the bag and some slings were made in a simple way and attached to the bags. Tassels were also made to beautify the bags. Some tassels were attached at the top of the bag near the slings, some were attached at the side of the bag and some were attached at the lower portion of the bag for extra decoration.

3.3.8 : Costing

After the construction of bags was done then the next step was the estimation of the cost of the tote bags. Stitching, designing, and labour were calculated as per cost in rupees. Adding the cost of painting, stitching, extra decoration and attaching pockets in vegetable bags was also calculated. Profit was then estimated to be 25% of the cost price of each bag. Thus, the estimated sale price of each bag was different depending upon inputs on each design.

3.4 : Techniques Used

3.4.1 Fabric painting

Freehand painting was used for logos. For fabric painting, acrylic colours were used in which blue and green colours were mostly used in all the logos because these colours depict eco-friendly sensibility.

3.4.2 Patchwork

Patchwork was used for the construction of the tote bags. Crazy quilting was used to decorate a few bags. Random sizes of big and small pieces were attached. Symmetric and asymmetric arrangements were made to create patchwork pieces.

3.4.3 Couching

Couching was also used for the purpose of highlighting some portions of the bags. Machine couching and hand couching were both done on the bags.

3.5 : Market Acceptability

3.5.1 Questionnaire

To check the consumer acceptability of the bags a questionnaire was made and was administered to 50 respondents selected randomly from Jalandhar district by purposive random sampling. Before executing the questionnaire, 10% respondents i.e., 5 persons were administered the questionnaire for pre-testing or pilot run. Any ambiguity or mistakes were thus removed. Questionnaires were filled by asking questions from the respondents. It was ensured that the respondents understood the language. Wherever required, vernacular translation was provided by the researcher.

3.5.2 Execution of Questionnaire

While executing the questionnaire great care was taken. Those respondents who didn't understand English language, for them the vernacular translation was provided by the researcher. If any respondent had any doubt the researcher clarified it. The researcher herself filled the questionnaire and ensured that there was no ambiguity or misunderstanding faced by the respondent.

3.6 : Result and analysis

Data obtained from the survey were coded, tabulated and expressed in frequency and percentage. The percentage was calculated to find out the acceptability of the bags.

RESULTS AND DISCUSSION

This chapter furnishes the results emerging out from the analysis of the data of the present investigation. The data have been organized and analyzed by taking into account the objectives of the study. All the pertinent information has been categorised and reported under the following major sections:

4.1 : Preparation of Sustainable Bags i.e. Vegetable bags and Grocery bags

To make the sustainable vegetable and grocery bags more attractive tassels were attached. After stitching the bags tassels were added. For making tassels the leftover textile scraps were used which remained after making the bags. Various types of shapes were cut out of the fabric scraps. Many were folded in a square pattern and from them circular shapes were generated. Then thread was passed from the centre to join them all. The tassels as per availability and aesthetics were long or short. Some were placed at the top or along the handles of the bags while some were attached at the lower corners of the bag or along the lower edge of the bags as per the aesthetic requirement.

DESIGNING AND DEVELOPMENT OF SUSTAINABLE FASHION LOGO-PATCH-WORK TOTE BAGS

4.1a Cutting and Preparation of Circular Tassels for Decoration of Bags

4.1b Attachment of Tassels by Hand/ Machine on to Sustainable Bags

4.2a. Grocery Bags

In each of the grocery bags inner lining was attached neatly and it was made reversible also.

FRONT BACK

SF-G Bag Design No.1

In this grocery bag with Sustainable Design Logo 1, a triangular piece patchwork was done. In the centre portion, plain white fabric was attached and on it sustainable fashion logo No.1 was painted. Then these sections were stitched together. Similarly, on the back side of the bag same pattern was used. In the end, braided handles made with textile strips were attached. Finally, tassels were added at the end of the handle such that it hung a little over the logo and created a harmonious unit. Tassels were also attached at the lower corners of the bag. Care was taken that the colours of the fabrics matched well with the logo and the painted flowers pattern at the bottom portion of the bag.

FRONT BACK

SF-G Bag Design No.2

In this Grocery Bag with Sustainable Design Logo No.2, a symmetrical piece patchwork was done. In the lower portion of the bag light (beige) coloured fabric was attached and on it Sustainable Fashion Logo No. 2 was painted. Then these sections were stitched together and similarly on the back side of the bag same pattern was used. In the end, handles made with beige coloured textile strips were attached. Finally, tassels were added at the end of the handle such that it hung a little over the logo and create a harmonious unit. Care was taken that the colours of the fabrics matched well with the logo.

FRONT BACK

SF- G Bag Design No.3

In this grocery bag with Sustainable Design Logo No. 3, a symmetrical patchwork was done. On the top right portion of the bag plain white rectangular fabric was attached and on it Sustainable Fashion Logo No. 3 was painted.

Machine couching was used to make the lower right corner patch stand out with it's diagonal multi-hued lines. To make the bag more attractive and beautiful pin-tucks were made on the top left side patch of the bag. Then these sections were stitched together. Similarly on the back side of the bag same pattern was used. In the end, braided handles made with textile strips were attached. Finally, tassels were added at the lower portion of the bag. Care was taken that the colours of the fabrics matched well with the logo.

FRONT BACK

SF- G Bag Design No.4

In this Grocery Bag with Sustainable Design Logo No.4, an asymmetrical patchwork was done. At lower side right portion of the bag plain white fabric was attached and on it Sustainable Fashion Logo No.4 was painted. Vertical lines using machine couching were made on the left lower corner patch to make it more attractive. Then, these section were stitched together and similarly on the back side of the bag same pattern was used. Handles made with straight textile strips of the printed fabric leftovers were attached to the bag. Finally tassels were added at the lower portion of the bag. The researcher ensured that the colours of the fabrics matched well with the logo.

4.2b. Vegetable Bags

In each of the Vegatable Bags inner lining was attached neatly. It was made reversible and the inner lining contained pockets which compartmentalised the section so that the vegetables didn't mix into each other.

4.2b Vegetable bags showing compartments/pockets created to avoid mixing of vegetables

FRONT BACK

SF-V Bag Design No.5

In this Vegetable Bag with Sustainable Design Logo No.5, symmetrical patchwork was done. On the lower right side portion of the bag plain white fabric was attached and on it Sustainable Fashion Logo No.5 was hand-painted. Horizontal lines using machine couching were made on the left upper corner patch to make it more attractive. Then these sections were stitched together and similarly on the back side of the bag same pattern was used. Handles made with straight textile strips of the fabric leftovers were attached to the bag. Finally a long tassel was added at the right side which fell along the side seam of the bag. The researcher ensured that the colours of the fabrics matched well with the logo.

FRONT BACK

SF-V Bag Design No.6

In this Vegetable Bag with Sustainable Design Logo No.6 a symmetrical patchwork was done. On the left upper portion of the bag plain white fabric was attached and on it Sustainable Fashion Logo No.6 was painted. Cross stitches were made on the stitching line to make it more attractive. Then these sections were stitched together and similarly on the back side of the bag same pattern was used. In the end braided handles made with textile strips were attached. Then the left-over scraps of matching fabrics were used to make beautiful tassels. Textile scraps were cut in a circular shape and from the centre thread was passed. At the top rhombus

shaped cushion was made and then all the shapes were attached together with a thread. Finally, at the end the long tassels were attached to create a harmonious unit. Care was taken that the colours of the fabrics matched well with the logo.

FRONT BACK

SF-V Bag Design No.7

In this Vegetable Bag with Sustainable Design Logo No.7, asymmetrical piece patchwork was done. At the left side top portion of the Bag fawn coloured fabric was attached and on it Sustainable Fashion Logo No.7 was painted. Machine couching was done to make the stitching line more attractive. Then all these sections were stitched together and similarly on the back side of the bag same pattern was used. Handles made with yellow coloured textile strips were attached. Then, finally tassels were made of leftover scraps . The fabric scraps were cut in circular shape and from their center thread was passed. Then tassels were added at the right side along with handle and at the lower corner portion of the bag. Care was taken that the colours of the fabrics matched well with the logo.

FRONT BACK

SF-V Bag Design No.8

In this Vegetable Bag with Sustainable Design Logo No.8, a symmetrical piece patchwork was done. On the lower left portion of the bag plain white fabric was attached and onit Sustainable Fashion Logo No.8 was painted. Then the various sections of the patchwork bag were stitched together and similarly on the back side of the bag same pattern was used. In the end handles made with sky blue colour and printed textile strips were attached. To make the bag more attractive tassels were added. For making the tassel circular shapes were cut and a rhombus shaped textile cushion was used at the top and rest of the tassels were attached to its three vertices. The tassel was attached in the centre of the top right patch portion of the bag. Care was taken that the colours of the fabrics matched well with the logo.

4.2: Result and Analysis

Table 4.1 : Distribution of Respondents on the basis of appropriateness of selling price for vegetable bags

(n = 50)

S. No.	Selling Price	Respondents	Percentage (%)
1.	220	6	12%
2.	260	38	76%
3.	300	6	12%
	Total	50	100

(n = 50)

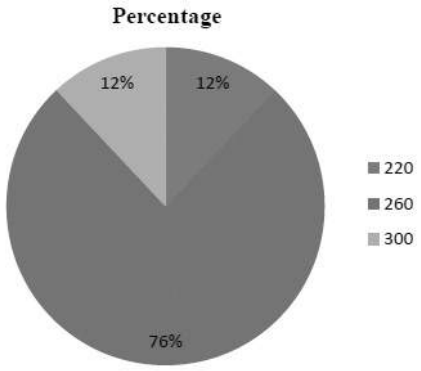

Fig 4.1 : Distribution of Respondents on the basis of appropriateness of selling price for vegetable bags

As per Table 4.1 and Figure 4.1, 76% of the respondents found Rs. 260/- to be the appropriate price of the vegetable bags while 12% each of the respondents found Rs. 220/- and Rs. 300/- to be the appropriate selling price for the vegetable bags.

Table 4.2 : Distribution of Respondents on the basis of appropriateness of selling price for Grocery bags

(n = 50)

S. No.	Selling price	Respondents	Percentage (%)
1.	240	43	86%
2.	260	5	10%
3.	300	2	4%
	Total	50	100

(n = 50)

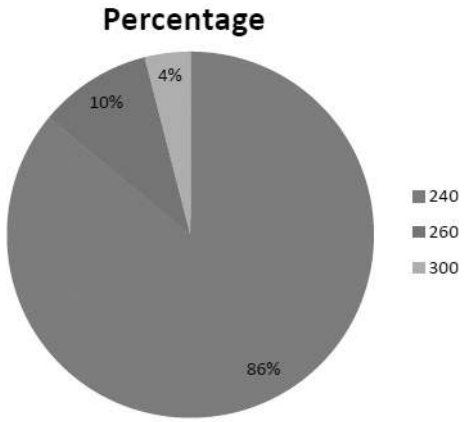

Fig. 4.2 : Distribution of Respondents on the basis of appropriateness of selling price for Grocery bags

As per Table 4.2 and Figure 4.2, 86% of respondents found Rs- 240/- to be the appropriate price of the Grocery bags while 10% each of the respondents found Rs- 260/- and Rs- 300/- to be the appropriate selling price for the Grocery bags.

Table 4.3 : Distribution of Respondents on the basis of suitability of vegetable bag being a good substitute as compared to plastic bag

(n =50)

S. No.	Variables	Respondents	Percentage (%)
1.	Yes	50	100%
2.	No	0	0%
	Total	50	100

(n = 50)

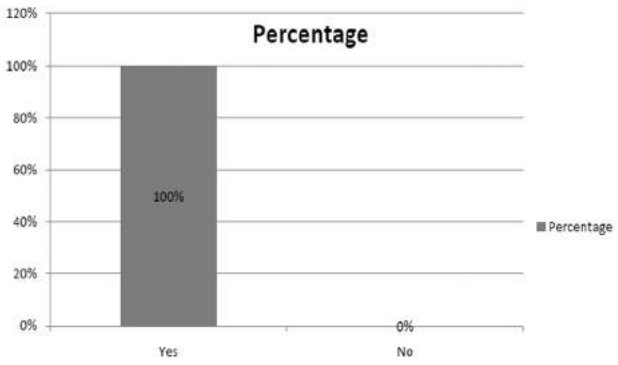

Fig 4.3 : Distribution of Respondents on the basis of suitability of vegetable bag being a good substitute as compared to plastic bag

According to the Table 4.3 and Figure 4.3, 100% of the respondents found the Vegetable bag to be a good substitute for plastic bags.

Table 4.4 : Distribution of Respondents on the basis of appropriateness of the vegetable bag pockets being appropriate for intended use.

(n = 50)

S. No.	Variables	Respondents	Percentage (%)
1.	Yes	50	100%
2.	No	0	0%
	Total	50	100

(n = 50)

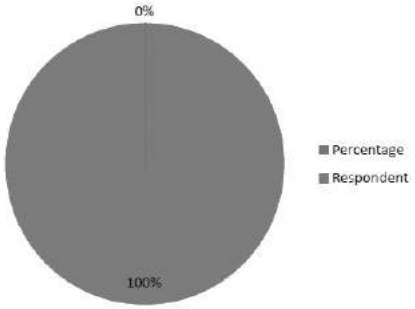

Fig 4.4. Distribution of Respondent on the basis of appropriateness of the vegetable bag pockets being appropriate for intended use.

As per Table 4.4 and Figure 4.4, 100% of the respondents found the vegetable bag pockets being appropriate for intended use which was that the vegetables remained segregated and did not mix into each-other. These pockets also helped to discourage the use of small polythene bags inside the main bag.

Table 4.5 : Distribution of Respondents on the basis of appropriateness of size of Grocery bag for intended use

(n = 50)

S. No.	Variables	Respondents	Percentage (%)
1.	Yes	46	92%
2.	No	4	8%
	Total	50	100

(n = 50)

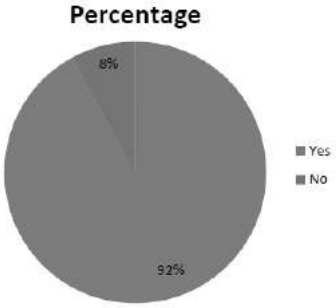

Fig 4.5 : Distribution of Respondents on the basis of appropriateness of size of Grocery bag for intended use

DESIGNING AND DEVELOPMENT OF SUSTAINABLE FASHION LOGO-PATCH-WORK TOTE BAGS

As per Table 4.5 and Figure 4.5, 92% of the respondents found the size of grocery bag to be appropriate for intended use while 8% respondents did not think so and desired the bag to be slightly bigger and wider.

Table 4.6 : Distribution of Respondents on the basis of appropriateness of size of vegetable bag for intended use

(n = 50)

S. No.	Variables	Respondents	Percentage (%)
1.	Yes	38	76%
2.	No	12	24%
	Total	50	100

(n = 50)

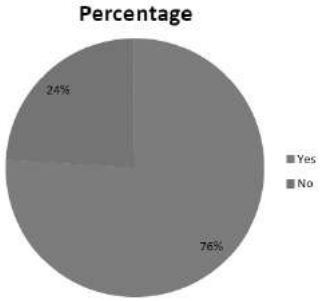

Fig. 4.6 : Distribution of respondents on the basis of appropriateness of size of vegetable bag for intended use.

As per Table 4.6 and Figure 4.6, 76% of the respondents found the size of the vegetable bag to be appropriate for intended use while 24% of the respondents desired the bag to be bigger and wider.

Table 4.7 : Distribution of Respondents on the basis of acceptance of the vegetable bag's innovative design

(n = 50)

S. No.	Variables	Respondents	Percentage (%)
1.	Yes	49	98%
2.	No	1	2%
	Total	50	100

(n = 50)

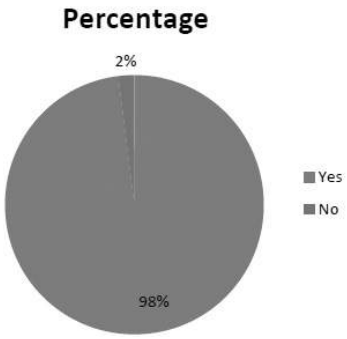

Fig 4.7 : Distribution of Respondents on the basis of acceptance of the vegetable bag's innovative design.

As per Table 4.7 and Figure 4.7, 98% of the respondents appreciated the bag's innovative design but 2% of the respondents wanted bigger pockets inside the vegetable bag.

Table 4.8 : Distribution of Respondents on the basis of suggestions offered

(n = 50)

S. No.	Variables	Respondents	Percentage (%)
1.	Yes	16	32%
2.	No	34	68%
	Total	50	100

(n = 50)

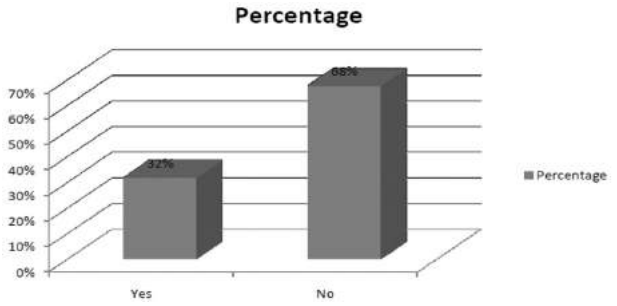

Fig 4.8 : Distribution of Respondents on the basis of suggestions offered.

As per table 4.8 and Figure 4.8, 68% respondents did not give any suggestions while 32% respondents offered suggestions like: the size of the vegetable bags should be increased to 18"×20" so that inner pockets are also suitably used. Finishing can be neater in fabric painting of bags, avoid the use of white fabric, thicker and sturdier fabrics must be used in the bags.

Table 4.9 : Distribution of Respondents on the basis of bags being suitable as per current needs of the society

(n = 50)

S. No.	Variables	Respondents	Percentage (%)
1.	Yes	50	100%
2.	No	0	0%
	Total	50	100

(n = 50)

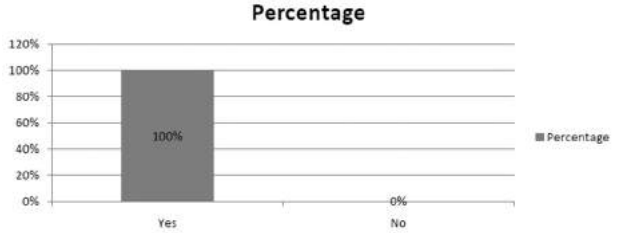

Fig 4.9 : Distribution of Respondents on the basis of bags being suitable as per current needs of the society.

As per Table 4.9 and Figure 4.9, 100% respondents found the bags to be suitable as per current needs of the society.

Table 4.10 : Distribution of Respondents on the basis of inclination to order similarly designed bags

(n = 50)

S. No.	Variables	Respondents	Percentage (%)
1.	Yes	29	58%
2.	No	21	42%
	Total	50	100

(n = 50)

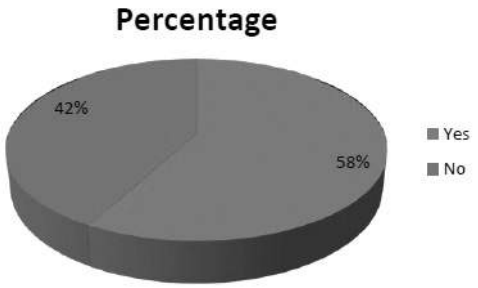

Fig 4.10 : Distribution of Respondents on the basis of inclination to order similarly designed bags.

As per Table 4.10 and Figure 4.10, 58% respondents showed an inclination to order similarly designed bags while 42% Respondents did not demonstrate such an inclination.

Table 4.11 : Distribution of Respondents on the basis of willingness to refer these bags to their friends / relatives

(n = 50)

S. No.	Variables	Respondents	Percentage (%)
1.	Yes	46	92%
2.	No	4	8%
	Total	50	100

(n = 50)

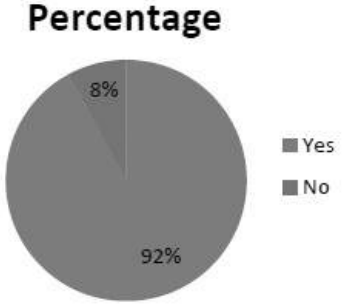

Fig. 4.11 : Distribution of Respondents on the basis of willingness to refer these bags to their friends / relatives

As per Table 4.11 and Figure 4.11, 92% of the respondents showed willingness to refer these bags to their friends/relatives while 8% respondents negatively to this query.

4.3a College Bag

4.3b Ladies Hand Bag

4.3c Men's office-cum-tiffin Bag

Due to the feedback from consumers during the survey the possibility of using the bags in multiple ways was explored. It was found to be a constructive suggestion and the researcher explored this option by incorporating these bags for usage as college bags, ladie's bag, men's office-tiffin bag etc. As the bags were found to be very pretty and trendy with a meaningful logo on them so their multi use was suggested. This suggestion was fruitful with a meaningful outcome.

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COMPARATIVE STUDY OF WOVEN FABRIC MANUFACTURED FROM COTTON, LINEN, HEMP AND BAMBOO YARN

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Abstract

In this study, we have examined the effect of different yarn materials such as cotton, hemp, linen and bamboo on the fabric properties. The raw material such as cotton, hemp, linen and bamboo yarns required for carrying out the experimental study was procured from the mills. Different types of the woven fabrics were produced from each of the raw material with the plain weave by keeping the same cloth construction. Different woven fabric samples thus produced were tested for different fabric properties such as bursting strength, tearing strength, flexural rigidity, air permeability, crease recovery, etc. After conduct of the study, it has been found that the fabrics produced from the hemp & linen have more bursting strength, flexural rigidity than that of produced from the cotton & bamboo yarns. Fabric produced from the hemp shows more tearing strength & air permeability than that of produced from cotton, bamboo & linen yarns. Fabric produced from the cotton yarn exhibits high crease recovery than that of produced from Hemp, Linen & Bamboo yarns.

Keywords : Hemp, Bamboo, Linen, Sustainability

1. Introduction

Cotton is an important agricultural commodity traded all over the world. However, the value chain of cotton right from the farmer level till the end-user level is affected by problems of inefficiency, wastage, contamination in the form of trash content, as well as unsustainable use of inputs, such as water, pesticides and fertilizer. In order to achieve the sustainable growth, there is a need to balance both the economic and ecological factors influencing cotton cultivation. It means that the cotton related textile production imparts various effects on environmental conditions, hence, it is of paramount importance to find an alternative to cotton for fabric production.

Linen is up to twelve times stronger than the equivalent cotton product, which dramatically increases its life span and therefore does not need to be replaced so often. Linen absorbs dye well, especially natural dyes, and does not require chemical treatments. While flax fiber is primarily a cellulosic fiber, its chemistry and characteristics provide specific properties that differ from cotton and many other natural fibers.

Hemp has high tensile strength, low elongation of about five percent and resists ultraviolet, mold, and rotting. Hemp has excellent several properties such as the moisture absorption and release properties, air permeability, warmth retention, cold and warm sense, high temperature resistance, insulation, anti-ultraviolet, anti-radiation qualities, anti-mildew and antibacterial health- care properties and sound deadening properties, etc. Hemp crops mainly grow in moderate climate regions, where almost no irrigation is needed. The water use for cotton exceeds the hemp water use in a range of 5 to 10 times. When growing hemp, nearly no herbicides, pesticides and fertilizers are applied to the crops. Since hemp as well as cotton are natural fibers, they have many similar properties, such as good breathability and thermal insulation when wearing.

The advantages of using bamboo as a raw material for textiles includes its renewability, its biodegradability carbon sequestering abilities, etc. There are several advantages of bamboo such as its soft feel, its antimicrobial properties, its quick moisture absorption and drying capabilities, etc.

There are many sustainable alternatives to cotton such as Bamboo, Linen and Hemp and a great scope lies in choosing such yarns to make fabric which can provide us similar properties as that of the cotton. The advent of new types of yarns such as Bamboo, Hemp and Linen make it imperative to study the potential of these yarns with a view so as to use them as a substitute for cotton to a maximum extent. Besides helping to save the environment, the properties of the fabric produced from such yarns are also found to be benefited.

The objective of the study is to carry out the comparative evaluation of the fabric properties made from the cotton, hemp, bamboo and linen yarn along with its suitability with regard to the issue of sustainability.

2. Material and Method

In order to carry out the research work, 100% cotton, hemp, linen and bamboo yarns of 21s Ne are used as the raw material. The selected raw material was tested for different yarn properties and its test results are as shown in Table 1.

COMPARATIVE STUDY OF WOVEN FABRIC MANUFACTURED FROM COTTON, LINEN, HEMP AND BAMBOO YARN

Table 1 : Test Results of the Raw Material

Property	Cotton	Linen	Hemp	Bamboo
Count	21.425	21.836	21.703	21.2
Count CV%	0.1664	0.3746	1.1105	0.4457
CSP	2707	4969.2	4326.9	2802.9
TPM	635.5	394.6	161.7	560.4
Hairiness S3	63	42	16	54.1
U%	8.815	23.722	23.397	9.15

The design of the experiment for manufacturing of different woven fabric samples with four different types of the raw material is as shown in Table 2.

Table 2 : Woven fabric samples to be produced with 4different raw material

Sr. No.	Particulars	Woven Fabric Samples
1	COTTON WARP X COTTON WEFT	Cotton Fabric
2	LINEN WARP X LINEN WEFT	Linen Fabric
3	HEMP WARP X HEMP WEFT	Hemp Fabric
4	BAMBOO WARP X BAMBOO WEFT	Bamboo Fabric

Two for one Twister (TFO) machine running at the speed of 14000Rev. / Minute and having pot diameter of 165 mm was used for manufacturing of double yarns from each type of the raw material. Sample Weaving Machine Set of CCI make was used for producing different types of the above-mentioned woven fabric samples.The fabrics produced under the study are tested for their properties as given below in Table 3.

Table 3 : Fabric Test Method/Standards

Sr. No.	Property	Test Method
1	Fabric Thickness (mm)	ASTM D 1777 Under 2kpa Pressure
2	Flexural Rigidity (mg-cm)	BS 3356-1990
3	Crease Recovery Angle (degree)	IS 4681
4	Air permeability (cfm)	ASTM D 737 Pressure: 125pa Test area: 38cm2
5	Bursting Strength (kgf)	ASTM D 3786
6	Tearing Strength (gms)	ASTM D1424-09 Elmendorf
7	GSM	ASTM D3776

The data obtained from the test results was analyzed by using the suitable statistical tool i.e. "One Way Anova".

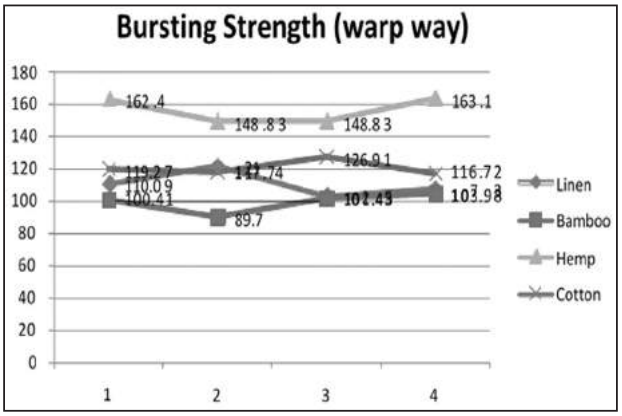
3. Results and Discussion

After producing different samples of the woven fabrics, all these woven fabric samples were tested for different fabric properties such as bursting strength, tearing strength, flexural rigidity, air permeability, crease recovery, etc. The test results of all these properties are discussed as given below.

3.1 Bursting Strength

Bursting strength of all the woven fabric samples were tested in warp direction. The graphical representation of bursting strength of different fabric samples produced is as shown in Figure 1.

Figure 1 : Bursting Strength of Woven Fabrics

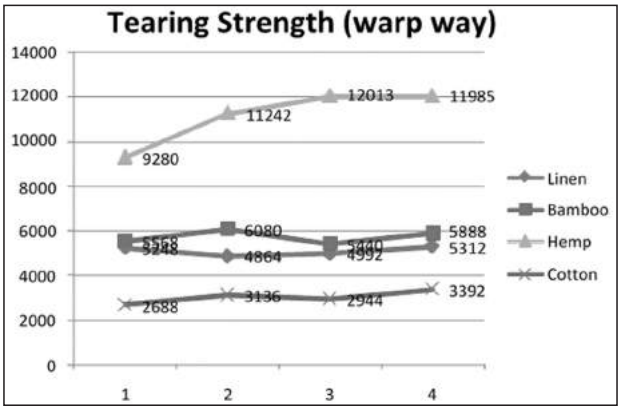


According to statistical analysis of the data, it has been found that there is a significant difference between type of the raw material and bursting strength of the fabrics. In the above figure, it has been seen that the fabrics manufactured from hemp is having comparatively more bursting strength than those manufactured from cotton, linen & bamboo. This can be attributed to the fact that, yarn with more strength eventually generates a fabric with higher bursting strength.

3.2 Tearing Strength

According to statistical analysis of the data it has been found that there is a significant difference between type of the raw material and tearing strength of the fabrics. Graphical representation of tensile strength of different fabric samples produced isas shown in Figure 2.

Figure 2 : Tearing Strength of Woven Fabrics

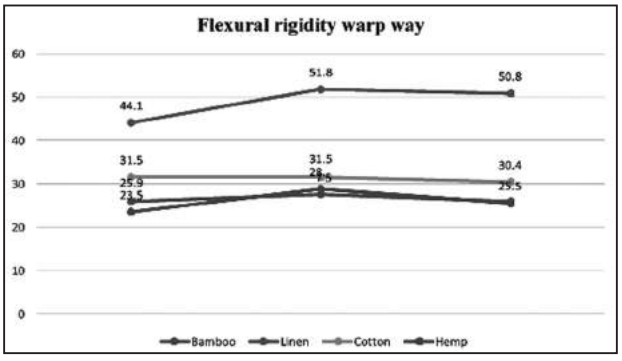


In the above figure, it has been found that the fabric manufactured from hemp shows comparatively more tearing strength than that of manufactured from cotton, linen & bamboo. This can be attributed to the fact that, the yarn with more tensile strength and more cohesion between fibres (generated due to more twist per meter) eventually generates a fabric with higher tearing strength.

3.3 Flexural Rigidity

According to statistical analysis of the data, it has been found that there is a significant difference between type of the raw material and flexural rigidity of fabrics. Graphical representation of flexural rigidity of woven fabric samples is as shown in Figure 3.

Figure 3 : Flexural rigidity of woven fabrics

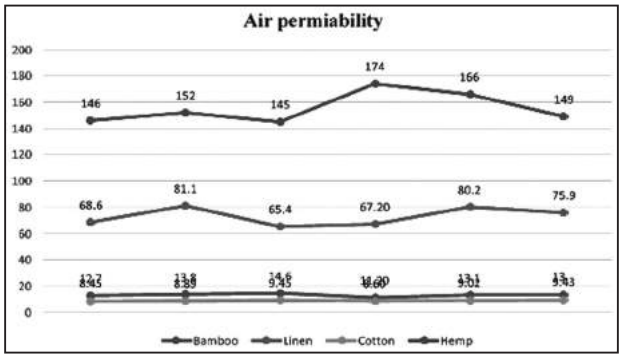


In the above figure, it has become clear that the fabrics manufactured from linen have more flexural rigidity as compared to that of manufactured from cotton, hemp and bamboo yarns. This can be attributed to the fact that the linen yarn has high stiffness in relation to the cotton, bamboo and hemp yarns which in turn assist to produce the woven fabric with high flexural rigidity.

3.4 Air permeability

According to statistical analysis of the data, it has been found that there is a significant difference between type of the raw material and air permeability of fabrics. Graphical representation of air permeability of woven fabric samplesis as shown in Figure 4.

Figure 4 : Air permeability of woven fabrics

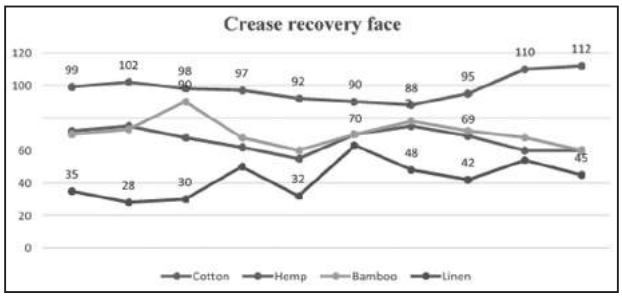


In the above figure, it can be seen that the fabrics manufactured from hemp are having comparatively more air permeability than those manufactured from cotton, linen & bamboo. This can be attributed to the fact that yarn with less twist per meter eventually produces fabric with more air permeability.

Crease Recovery

According to the statistical analysis of the data, it has been found that there is a significant difference between type of the raw material and crease recovery of woven fabrics. Graphical representation of crease recovery of woven fabrics is as shown in Figure 5.

Figure 5 : Crease recovery of woven fabrics



It is observed that the fabrics manufactured from cotton are having comparatively more crease recovery than those manufactured from hemp, linen & bamboo. This can be attributed to the fact that the cotton yarn has good resilience property as compared with the hemp, bamboo and linen which in turn produces the fabric with better crease recovery.

COMPARATIVE STUDY OF WOVEN FABRIC MANUFACTURED FROM COTTON, LINEN, HEMP AND BAMBOO YARN

Conclusions

On the basis of the above discussion, the broad conclusions of the experimental study are as follows:

- Hemp fabric showshigh bursting strength and high tearing strengthas compared with cotton, linen & bamboo fabric.
- Linen fabric exhibits more flexural rigidity in relation to the cotton, hempand bamboo fabrics.
- Cotton fabric exhibits better crease recovery as compared with hemp, linen & bamboo fabrics.

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MARKETING OF STITCH BONDING TECHNOLOGY OF WEB BONDING FOR PRODUCING NONWOVENS

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Associate Professor of Textile Technology, DKTE

Abstract

In this paper initially the photograph of stitch bonding process is given. Then the photograph of maliwatt stitch bonding technique is given. Then the applications of maliwatt stitch bonding is listed. Then the applications of maliwatt and arachne stitch bonding technique is given. Then the photograph of malimo stitch bonding process is given. Then the applications of nonwovens made from stitch bonded technique are listed. Then the photograph of malivlies stitch bonding technique is given. Then the applications of malivlies stitch bonded technique is given. Then the photograph of malipol stitch bonding technique is given followed by its applications. Then the photograph of voltex stitch bonding technique is given followed by its applications. Then finally the applications of voltex and arabeva stitch bonding technique is given. Finally the usefulness of the paper is stated.

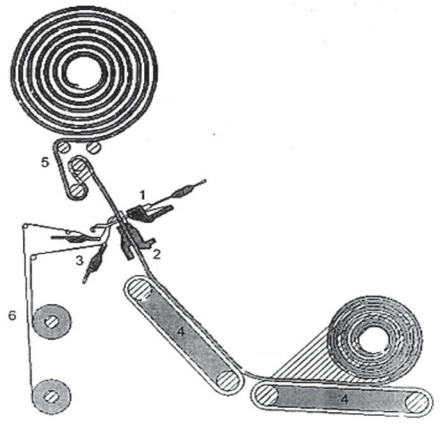


Figure 3.10 Stitch bonding process (*Source:* Batra & Pourdeyhimi 2012; Gupta 2013)

Photograph of stitch bonding process

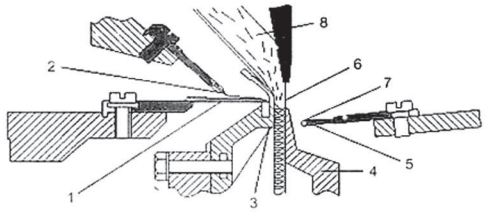


Figure 3.12 Stitch-bonding point and loop-formation cycle of Maliwatt stitch-bonding machine (*Source:* Albrecht et al. 2003)

Photograph of Maliwatt stitch bonding technique

Application of Maliwatt stitch bonded technology of web bonding for producing nonwovens

- Soft furnishings, uplhostery fabrics for mattresses and camping chairs, blankets
- Transportation cloth
- Cleaning Cloths, Fabric for hygiene and sanitary purposes
- Secondary carpet backing
- Lining fabrics, interlinings for shoes and apparel

Application of Maliwatt and Arachne stitch bonding technology of web bonding for producing nonwovens

- As an establishment of production of coverlets, covers and coats
- Warm protection or pressing material

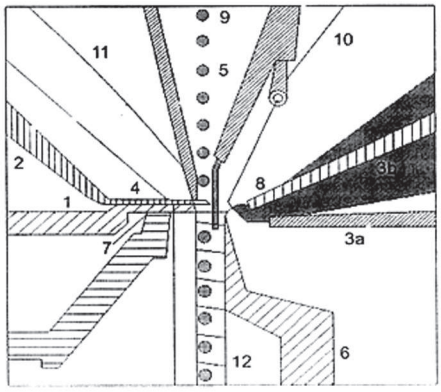


Figure 3.16 Malimo stitch formation process (Source: Russell 2006)

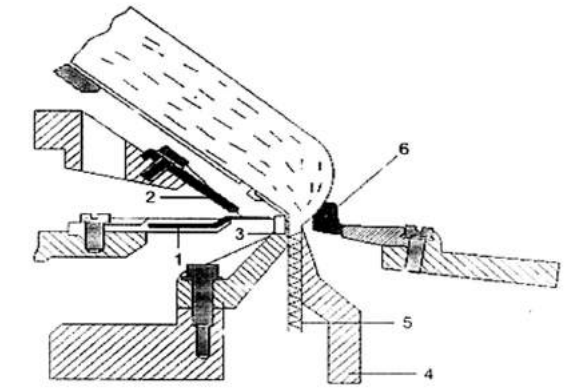
Photograph of malimo stitch bonding process

Application of malimo stitch bonding technology of web bonding for producing nonwovens

- Industrial Textiles : Composites for high-tech areas (fiber glass, carbon, Kevlar, HD-PE) sandwiched nonwovens, geotextiles, insulating materials. Laminating substrates, packing textiles
- Furnishing Fabrics, Home and Household Textiles:Furnishing fabrics, upholstery fabrics, textile wall coverings, cleaning and polishing cloths

MARKETING OF STITCH BONDING TECHNOLOGY OF WEB BONDING FOR PRODUCING NONWOVENS

- Towelling
  - Decoration
  - Beach wear
  - Towels
  - Shag fabrics



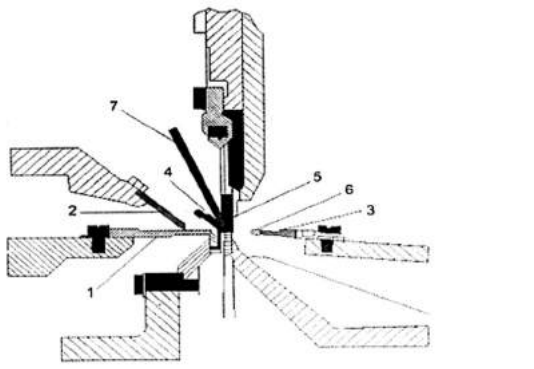
1 – Stitching needle
2 – Closing wire
3 – Knocking-over sinker
4 – Support rail
5 – Stitch bonded fabric
6 – Laying-in sinker

Figure 3.15 Malivlies stitch formation process and the stitched fabric (*Source:* Albrecht et al. 2003)

Photograph of Malivlies stitch bondingTechnique

Applications of malivlies stitch bonding technology of web bonding to produce nonwovens

- Auto inside spreads
- Felts for material blankets
- Sponge
- Cleaning cloths
- Geotextiles
- Channel materials
- Covering substrates and covers
- Items for therapeutic, hygienic and clean utilize
- Rug sponsorships



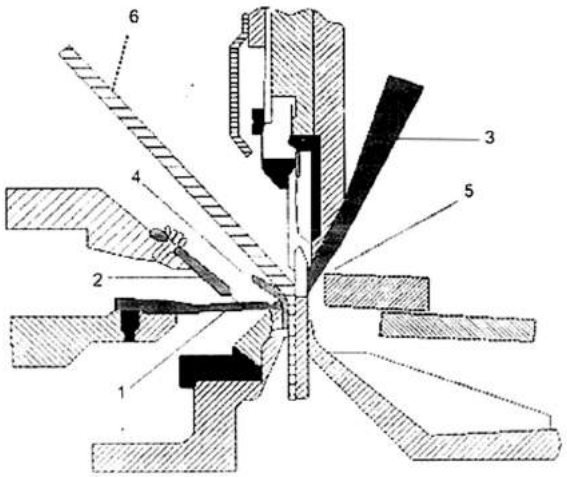
1 – Compound needle bar
2 – Closing wire bar
3 – Guide bar for pile yarn
4 – Knock-over sinker bar
5 – Pile sinker bar
6 – Pile yarn
7 – Ground fabric

Figure 3.17 Malipol stitch formation (*Source:* Albrecht et al. 2003; Russell 2006)

Photograph of MALIPOL STITCH BONDING TECHNIQUE

Application of nonwovens made from Malipol stitch bonded technique

- Blankets
- Cleaning textiles(wiping mop)
- Pile fabric for Velcro fastening tapes
- Lining plush and soft-toy plush
- Bathroom sets
- One-sided terry fabric
- Waddings
- Plush and imitation fur



1 – Compound needle bar
2 – Closing wire bar
3 – Fiber web
4 – Knock-over sinker bar
5 – Pile sinker bar
6 – Ground fabric

Figure 3.18 Voltex stitch formation process (*Source:* Russell 2006)

Photograph of VOLTEX STITCH BONDING TECHNIQUE

Applications of Voltex stitch bonding technology of web bonding to produce nonwovens

- Lining fabrics
- Imitation furs
- Soft-toy plush
- Shoe uppers
- Shoe lining
- Floor coverings
- Upholstery

Application of Voltex and Arabeva stitch bonding technology of web bonding to produce nonwovens

- Thermal stuffings
- Linings for rugs and carpets and blankets

REFERENCE

1. NONWOVENS BY KARTHIK ■

CCI mulls to export 10 lakh bales of cotton

The Cotton Corporation of India (CCI) plans to export at least 10 lakh bales of cotton during the current season.

Pradeep Kumar Agarwal, CMD of CCI, told recently it had procured almost 85 lakh bales of cotton at minimum support price (MSP) since the beginning of the current cotton season (October 2020-September 2021). With cotton prices rising, the CCI had reduced the purchases at MSP.

"The farmers are getting better prices," he said.

"Hence, CCI's daily purchase has dropped to 40,000 to 50,000 bales a day from about two lakh bales a day a few weeks ago," he added.

The CCI is active mainly in Telangana and Maharashtra. It will continue to be present in the market till the end of the season. Of the cotton procured so far, it had sold 12 lakh bales to the domestic textile sector.

The CCI has till now exported about 25,000 bales. It is looking at a minimum of 10 lakh bales for export this season, a majority of which would be to Bangladesh.

The governments of India and Bangladesh are expected to sign a memorandum of understanding in this regard. There could be exports to other countries through merchant exporters, Mr. Agarwal added. ❐

Exports rise for 2nd straight month in January

India's merchandise exports rose for the second consecutive month in January and at a faster pace than seen in preliminary estimates released earlier this month, official data released recently showed. In an indicator of the recovery in domestic demand, imports increased and the country's trade deficit narrowed to $14.54 billion.

The trade gap was $15.3 billion in January 2020 and 15.44 billion in December.

Merchandise exports rose 6.16% on-year in January to $27.45 billion while imports grew 2.03% to $41.99 billion in the month with gold imports rising a sharp 154.7% to $4.03 billion, data released by the commerce and industry ministry showed.

Exports had grown 0.14% year on year in December.

"January exports signal that our traditional and labour-intensive sectors of exports except apparels and leather have already passed the most challenging and testing times," said Sharad Kumar Saraf, president, Federation of Indian Export Organisations, adding that the trend shows an improvement in the order booking position.

Of the 30 major export sectors, growth was seen in 22. Non-oil, non-gold, silver and precious metals imports—an indicator of the strength of domestic demand—were $26.35 billion in January recording a growth of 7.5%.

"Another notable trend in the month of January was the modest 7.5% growth in Non-oil Non-gold imports supporting the revival of manufacturing activity in the country," said Prahalathan Iyer, Chief General Manager, Research & Analysis, India Exim Bank.

However, cumulative exports during April-January 2020-21 contracted 13.58% to $228.25 billion as against $264.13 billion during the same period last year.

Imports growth in January was led by gold, electronics goods, and pearls, precious and semi-precious stones.

"The trade deficit has sustained at a high level for the second consecutive month, which is a testament to the recovery in domestic demand, as well as the impact of higher commodity prices following the resurgence in global confidence," said Aditi Nayar, principal economist at ICRA. ❐

Textile stocks turnaround on global recovery

Stocks of textile companies focused largely on exports has seen a steady rise in the last few days with the revival in global demand.

Home textiles used for furnishing residence, towels, bedsheets, pillow covers and table linens are being bought more often int he US as the fear of Covid pandemic subside with the launch of vaccine.

Moreover, consumers, who are working from home, get more time to spend on the aesthetics of their house and spending more on home textiles.

This apart, hotels and motels getting back on their feet after the Covid impact are buying more bed linen as customers have become more picky about the freshness of bed linen in Covid times.

Shares of Indo Court Industries gained six per cent to ₹132 recently, while Welspun India, which was trading near its 52-week high of ₹78 in last few trading sessions, closed down by two per cent at ₹68 on profit booking. Arvind was down two per cent at ₹54, but scored handsome gains of almost 60 per

cent in three four months; and Trident jumped 87.5 per cent in last three months.

Most of the textile companies have registered a strong recovery in the third quarter of this fiscal and this expected to continue in the March quarter as the demand in the domestic market is also picking slowly.

However, the import duty of 10 per cent on raw cotton imposed in the Union Budget will push up the cost of textile companies and impact their margins. The levy of import duty on cotton will push up cost of extra long staple cotton such as Giza Cotton from Egypt and Supima Cotton from the US and makes India lose ground on premium textile exports. The Government has also proposed to set up seven textile parks under the 'Mega Investment Textiles Parks' over three years to make the textile industry become globally competitive, attract large investments and boost employment generation, said Manoj Patodia, Chairman of The Cotton Textiles Export Promotion Council.

The Budget has reduced the customs duty on caprolactam, nylon chips and nylon fibre and yarn to 5 per cent to encourage growth of the man-made fibre sector especially the MSMEs, he said.

Nidhi Marwaha, Vice President, ICRA, said notwithstanding the broader recovery, growth in discretionary spends and aspirational buying is likely to remain lower compared to other essential product categories such as active/lounge wear and affordable-to-medium value casual apparels. ❐

Cotton exports surge in Oct-Jan; cross halfway mark on lower prices

Riding high on the cost advantage in the international market, India has already exported about 29 lakh bales (of 170 kg each) of cotton by the end of January 2021, data shared by the Cotton Association of India (CAI) showed.

Nearly 60 per cent of the country's total projected cotton shipments were executed during the first four months of the 2020-21 season, the data showed.

The apex cotton trade body has projected India's exports of the fibre to be around 54 lakh bales for the season 2020-21 (October to September). This was higher by about 4 lakh bales from the previous year 2019-20. "Export shipments of cotton estimated by the CAI up to January 31, 2021 is 29 lakh bales. The CAI has estimated cotton exports for the season at 54 lakh bales," informed Atul Ganatra, President, CAI, in the trade body's January crop estimate released on February 8, 2021.

Notably, the data shows that in the initial four months of the season October 2020 to January 2021, cotton exports have touched highest in past three years. During the comparable period in 2018-19, cotton exports were reported at 24 lakh bales and in 2019-20 it was at 20 lakh bales.

Traders attributed the jump in exports to the lower prices and better quality of the initial crop.

The benchmark GUJ ICS-105 (29mm) variety quoted at ₹43,600 a candy (of 356 kg of processed ginned cotton) in the spot markets, which was ₹40,500 on December 5, 2020. The prices hovered between ₹37,500 and ₹40,200 during the early months of the season i.e. October and November 2020.

Rising trend *(Lakh bales of 170 kg each)*

Year	Total projected exports for the season	Oct-Jan shipments	% coverage
2018-19	50	24	48.00
2019-20	42	20	47.62
2020-21	54	29	53.70

Source : CAI

An exporter from Ahmedabad said that Indian cotton prices continue to be low when compared with the international markets. "The buyers are entering into new contracts even at the current prices," informed the exporter. Higher supplies driven by rising inventories from the previous season have capped the Indian prices.

ICE Cotton futures quoted at 80.74 cents a pound as against India's rate of 75-76 cents a pound.

Meanwhile, in its crop estimate for the month of January, CAI has retained the crop size for the year at 360 lakh bales. However, of the total projected supply of about 499 lakh bales for the season, first four months have reported total supply of 389.25 lakh bales.

Opening stock at the beginning of the cotton season on October 1, 2020 was estimated at 125 lakh bales. Of the 499 lakh bales supply projection, barring 125 lakh bales of opening stock, crop size for the current season is likely to be 360 lakh bales and 14 lakh bales of imports. ❐

Garment exporters fear losing premium market over increasing customs duty

The Budget's announcement on increasing customs duty on cotton may cast a shadow on India's advantage in premium/high-end garment exports to the world, according to cotton stakeholders.

This, according to the trade sources, is primarily due to the additional cost for imported cotton—mainly the extra-long-staple (ELS)—used in making high-value-added textiles and garments, which are exported globally under premium labels. ELS quality of Giza Cotton is imported from Egypt, while Pima Cotton is sourced from the US. The cotton stakeholders also expressed concerns about losing international market, especially US and Europe, to neighbouring competitors Bangladesh and Pakistan as well as Vietnam.

In her Budget speech, Finance Minister Nirmala Sitharaman said that in order to "benefit farmers, we are raising customs duty on cotton from nil to 10 per cent and on raw silk and silk yarn from 10 per cent to 15 per cent."

The Cotton Textiles Export Promotion Council has expressed its surprise over the government's decision. The Council said that it is concerned of a higher cost for value-added products including fabrics, made-ups and garments as a result of the hike in the customs duty.

The Southern India Mills' Association (SIMA) had also demanded a roll-back of the decision soon after the Budget.

As per data by the Cotton Association of India (CAI), India's cotton imports for the year 2019-20 (October to September) were projected at 15.50 lakh bales, whereas for the year 2020-21 it is estimated to be around 14 lakh bales, of which 4.5 lakh bales of cotton was imported as on December 31, 2020. India is the largest producer of cotton in the world with output for 2019-20 projected at 360 lakh bales and 358.50 lakh bales for the current year.

While the country is a cotton surplus market and a net exporter of cotton, the government's decision to impose an import duty on cotton has surprised the industry.

"This is not a healthy move. Every year we import about 14-15 lakh bales, which is about 5 per cent of our total production. It is imported for special end-use application - namely high value-added garments exports. Indian goods already suffer the highest import duty in our destination markets like the US. With this import duty, all the high-value-added export orders will go to our competitors, Pakistan, Bangladesh and Vietnam," said J Thulasidharan, President, Indian Cotton Federation told recently.

As per the trade insiders, the cotton textiles/garments using 51 per cent or more Pima cotton can quality for Supima lable, which commands higher price and premium in the US market as well as other prominent garment markets. ❐

Cotton stock with MCX touched a new high as exporters hedge risks

Cotton stokc in MCX accredited warehouse has touched a new high of 2,16,600 bales as on March 5 against previous high of 2,14,700 bales logged on March 30, 2019. The rising stock at warehouse was on the back of increasing hedging activities as the export demand, especially from China, has hit a new high. China has a low inventory.

Cotton prices have gained over 10 per cent so far this year following the firm trend in the global cotton trade. Cotton production globally is projected to touch a four-year low and imports by China are estimated higher. The Centre's decision to impose a ten per cent duty on imported cotton is seen as supporting domestic price.

The most active March contract on MCX gained by ₹80 to ₹22,230 a bale while the April and May contracts traded firm at ₹22,560 and ₹22,860.

"We have bagged a major order for yarn export to China and used the MCX platform to lock in cotton prices as the domestic prices have been rallying steadily in last few months and have the potential to wipe out margins," said Sanjay Agarwal, CEO of Sai Enterprises.

Arrival of the new crop in the market was about 250 lakh bales as of January-end from the season's start in October. The Cotton Corporation of India and other government procuring agencies have about 170 lakh bales of cotton as of January-end. The Cotton Association of India has estimated cotton supply at 380 lakh bales including the carry forward stock of 120 lakh bales and imports of six lakh bales. Overall demand is pegged to increase to 330 lakh bales against 25 million bales logged previous year due to pandemic impact. ■

Apology for a mistake

In February 2021 issue, the name of the Author Simran Kaur was mistakenly printed by SIMARN Kaur.

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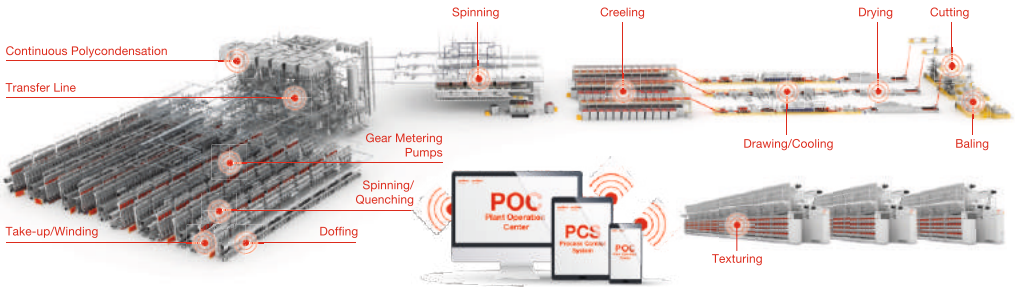

oerlikon barmag

oerlikon neumag

oerlikon nonwoven

Revered brand in Italy, Moda Biella set to launch its Summer 2021 Collection

Known for its heritage and top notch fabrics, Italian Luxury brand, Moda Biella is all set to launch its Summer 2021 collection. A revered brand in Italy, it is known for producing a remarkable array of beautiful superfine cloths, and this collection will consist of cloths that are colorful, well designed, robust and comfortable.

Moda Biella's fabrics are meticulously woven using lustrous natural fibers, featuring merino fabrics and luxury worsteds in exotic wool blends, with finer micron, finer quality, better handle and drape than before. The brand's wool comes from the Merino sheep in Australia, New Zealand or Tasmania.

Woollen fabrics are attributed to be worn in winters and keep oneself warm during the season. However, there is a huge misnomer that wool is a fabric only suitable for winters. Wool is known to be an insulator and therefore keeps you warm in the winters while also being breathable in the summers. It's one of the rare natural fibres that have this trait.

After a thorough process of research and forecasting, the designers at Moda Biella, curated the Summer 2021 collection keeping in mind the celebrated and auspicious wedding season, with fabrics that are lighter, more breathable and more versatile fabrics.

The Summer 2021 collection comprises of four categories –

I. EXCLUSIVE LENGTHS : Leave a Lasting Impression

a) **REGIO LUXURA :** An exquisite merino/ polyester collection of Super 140's available in the colors of steel grey, oyster, and irongrey blues, presented in micro/ macro structured patterns, minute checks and precise geometrical patterns.

b) **SILK FLAIR :** An unparalleled blend of merino and silk, a magical ensemble with vibrant colours likewine-red, smoky grey, blues shine across the collection in Super 120's merino. The designs have been influenced by graphic streets and translated into micro/ macro structured patterns, minute checks and broad identical checks.

c) **ULTIMATI LANCIANO :** Presenting outstanding designs for premium suiting - comfortable executive wear, is available in unique colours and patterns ranging from checks to stripes. This collection is in Super 100's merino rich blend.

d) **LA SPEZIA EXCLUSIVO :** Anamazing blend of of merino and poly of Super 90's merino, designs in this range spans across pin checks, graph checks and few micro/ macro structure patterns, available in eye-catchy colors like indigo blue and cocoa browns.

e) **MOON LIGHT :** A range of jacquards with unique colour combinations and designs, an ideal pick for ceremonial wear.

II. SUITING – UNIT LENGTHS : True Suaveness

a) **ESOTICO :** Taking Inspiration from the darkness of the night, this fine and elegant range reflects to the colour array spanning across black, purple, blue and grey, interlocking Super 120's cashmere/ wool/ poly.

b) **PRESIDENT LINE :** Regal collection showcasing darker tones commanding prestige. Choose from classic blues and greys in rich Super 120s merino blends

c) **MILLED FINISHES :** A refined blend of wool/ poly in 70/30, this range is rich in texture and is beyond compare

d) **VINCITORE :** A collection that is inspired by being victorious, has a prominent use of classic colours like beige, blue and wine in designs like Prince of Wales, chalk stripe, blending merino/ poly make for extreme comfort.

e) **DI LENITIVO :** This range is inspired from the 19th century, with a Colour palette including blacks, greys, browns, blues and reds in designs of stripes, checks and unique shapes, manufactured in a blend of Super100's merino, poly and lycra.

f) **VIBO-VALENTIA :** Amongst the repertoire of colours this collection, comprises of an unbeatable combination of patterns, textures & colours, where blue ranks the highest and is extremely dignified. This range is a blend of Super 90s merino/ poly making it fine and refined.

g) **CENTARIA :** An innovative product with Cationic dyeable polyester and superfine wool. Cationic conveys richness and depth in color value while wool gives a luxury touch. The designs are trendy in vibrant colours.

h) **ZELKOVA :** With minimalistic and classy designs, this range has fine texture playing an important role in the drape of the stitched garment. The collection is in the composition of 90's merino with poly and modal.

i) **LUSH MILLAZO :** A luxurious and comfortable fabric, available in myriad colours such as burnt reds, light blues, pastel greens and golds, a prime mash up of Super 70's merino/ poly makes it cozy & comfortable.

j) **CELEBRATION :** Inspired by the mood for celebration, choose from myriad colours in this collection like blues, browns, greens, golds and aquas.

k) **TREND DLITE :** A superlative alliance of Merino/ Poly with the joint effort of Super 90s, spick and span designs revolving around the contemporary state of art. The range is full of virgin, modish and distinct vogue.

With the youthful hue like royal sapphire, jet ebony and blossoming roses.

l) **DONICY :** A luxurious 120s blend of poly/ wool/cellulose perfect for all seasons.

III. JACKETING : The Heir of Heritage

a) **EMPEROR'S JEWEL :** Honoring nature's abundance - the change of seasons and the fleece of cashmere goats. The array of colors adorning the collection make it look sophisticated.

b) **FAZIO DI MILANO :** Inspired by different geometrical patterns in an uber-fine exotic wool blend; perfect for jacketing. Interesting check patterns and vibrant colors defines this collection.

IV. SPECIAL BLACKS

a) **BLACK VOLCANO :** This collection which integrates the dark of the night, abundantly using brunette colours with an emphasis of the darker/ blacker tones.

b) **ONYX :** An all wool 140s ultimate collection of a range of muted tones like ebony, coal and charcoal inurbane designs.

V. SPECIAL WHITES

a) **LA NEVE :** A wonderfully lustrous fusion of micro and macro structure patterns and geometrical patternstoo. The range of whites are pearl, bleached, milky, snowy and white.

VI. ESSENTIALS : Eternally classic

a) NEO TECH® -The culmination of extensive efforts in research and development; done with the intention of bringing a paradigm shift in the Indian Textile industry. Leveraging NEO TECH® techniques, Moda Biella has developed specially designed anti-viral and anti-bacterial fabrics inhibiting the growth and retention of micro-organisms within minutes, making them safe and hygienic. These fabrics retain their properties up to even 30 washes, and are suited for everyday wear.

b) **MAJESTICO :** A Super 120's wool rich premium fabric with both pastel and dark shades, ideal for premium suits & trousers.

c) **SCINTILLA :** Exquisite Super 120's blended with wide range of greys, blues, greens & wines.

d) **FASHIONISTO :** Vibrant colours in Super 100's blend, best choice for trendy fashion wear.

e) **INFINITO :** Wool rich Super 100's blend with a wide range of impressive colours.

f) **ITALIA KHAKI :** A biscuit brazen, brownish khakhis are part of this range. The perfect mixture is perfect for suitings.

g) **FORTUNA :** All-year round fabric perfect for everyone.

Vikram Mahaldar, MD & CEO, OCM Pvt. Ltd., said, "With this wide-range of fabrics and plethora of shades that Moda Biella's Summer 2021 Collection has to offer, customers will certainly have plentiful options to choose from. Post the pandemic we are excited to launch this collection, as it highlights varied woollen blends that are extremely comfortable, breathable and lightweight, perfect for summers and the weddings. We, at Moda Biella, will continue to introduce innovative fabrics for our customers."

Malcolm Campbell, European Advisor – Moda Biella, said, "The Fashion Scene for 2021 will be exciting, stimulating and thrilling to an audience of consumers who want to be treated to a new, positive, and enthralling array of fashion fabrics in new textile designs, nature inspired colours, technical innovation and beautiful cloth finishes. The new sartorial suit ideas for Spring 2021 in textures and small check designs for two piece and three piece suits, christened 'Beautiful Biella'. Moda Biella, the heritage of luxury fabrics from Italy is now leading the way to a new brighter future in luxury fabrics offering exclusive colouration, enhanced creativity, exquisite finishes, elevated performance, excellent value and elegant styling presenting a plethora of options for the customers to choose from."

About MODA BIELLA

MODA BIELLA has been a revered brand in Italy for many years. The fabrics are truly top notch- with superfine exotic fibers to produce a remarkable array of superfine cloths. With a line-up of finely designed fabrics, this brand is not only deep-rooted to its heritage of making world class fabrics but also excels in technical innovation, and outstanding colour and design features.

About OCM

OCM, one of India's largest fabric manufacturers, forays into the Indian market with the launch of Italy's luxurious heritage fashion brand – "MODA BIELLA".

The Company has an extensive 37 acre complex that houses a new-age plant with an annual capacity of 8 million meters of fabric and an employee base of 1,900. The company's ownership lies with the promoters of the Donear Group.

The product design function is at the forefront of global styling. Today, the Company has an extensive product range of high quality all-wool and wool-blended worsted fabrics.

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Power Brand Grado rolls out the much Awaited Spring Summer Collection

The brand GRADO is a coming together of synergies from legacy brands Grasim (erstwhile Gwalior Suitings) and OCM, with an intent to offer the entire product basket to the consumers - ranging from synthetics to cottons to worsted, under the same brand umbrella. Now, the brand is ready with a jaunty new Spring Summer 2021 collection, showcasing a fresh range of colors and designs, a perfect line-up for the upcoming season as well as the weddings.

Summer has always brought joy and hope to all – it's been the season of fresh beginnings, new fiscals, green shoots, colour and the onset of weddings. For Indian households, weddings have been an important occasion and wherein people need to look their best. GRADO too believes in the auspicious occasion of marriage and the necessity for people to drape the perfect outfits. Post-pandemic lockdown, the wedding season came as a ray of hope compelling people to don the right garb.

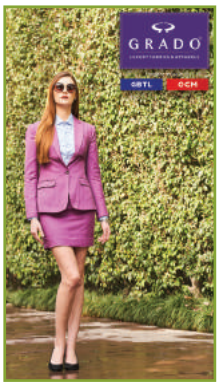
This year GRADO by GBTL offers wonderful fabric ranges—

- STREEZA– A premium 4-way stretch fabric epitomizing unique combination of comfort, luxury and style – for Freedom of Movement. This fabric is a flagship product of GRADO BY GBTL and is an innovative and differentiated concept compared to the industry norm of using a Stretch filament in the fabric.
- PICASSO - It is a unique blend of TR fibers which is dyed at fiber stage which gives excellent color fastness and feels premium in terms of fall and finish. It's really a perfect product basket with designs and colours for suits.

- DONATI - A unique blend of TR and stretch fibers with an eye-catching selvedge and colours.
- MILAZO - TR and wool fibers are dyed at fiber stage and resembles polywool-like properties and has a beautiful selvedge in a range of designs.
- ALSACE - 20% wool tweed for jacketing
- A range of jacquards and fancy PV also adorns the range in a stunning array of colours and are extremely light weight.

And, GRADO by OCM offers-

- IMPERIAL (MPL): Finest Luxury Super 120s wool blended with extra fine polyester (W/P 70/30), Imperial is ideal fabric for suiting. With an exotic touch finish and available in a range of exclusive designs and colors, it is a must buy range for every wardrobe.



- CASA BELLA (CSB): Super 100s wool embedded with extra squashy polyester with magnificent composition of (P/W 50/50). Having exceptional finish, it is available in a glorious range of colors and designs.
- ZIA-ZIO : Presenting a collection of top-quality Jackets and Trousers in co-ordinates.
- BUNDEE (BND): A perfect harmony of colour, design and blends that too, all in bold style. Ideal for bundees, this range stems from a vibrant designer's perspective and has a vast color palette.
- INVICTA (EVA): Polyester/cellulose in a blend of 65/35, perfect for summers. This fabrics ensures comfort with formula one finish which results in a more smooth and lustrous fabric.

Balancing the bold and bright with the neutral and classic, GRADO's Spring Summer 2021 has a wide-range of palette endorsing-

- Pale hazy petals combined with exotic pinks and an herbal greens creating a fresh summer look that celebrates the positivity and happiness of colors from nature;

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- Adding a vibrant dynamic contrast are yellow, sweetly scented lavender, fragrant oranges and a cool blues combine to create a dynamic contrast with a crisp qua;
- Empowering (shades of) purple and red infuses glamour to a story of vivid contrasts

In order to arrive at these fabric designs and colours, an in-depth research and forecasting has been conducted from a domestic and global perspective. The Spring Summer 2021 collections present a plethora of hues in every colour giving the customers a wide range of choice. This collection is not only perfect for the upcoming season but also amount to be the quintessential attire for the wedding season, which can be custom tailored into be spoke suits (Single breasted, Double breasted, tapered leg trousers and fitted jackets), bandhgalas, sherwanis & bundis too.

Commenting on the GRADO's Spring Summer Collection 2021, Manish Shukla, CMO of GRADO by GBTL, said, "We are elated to announce the launch of GRADO's Spring Summer Collection 2021, and are certain that our customers will be really happy and content with the phenomenal range of fabrics GRADO has to offer with trending colour palettes. This collection will also have a variety of fabrics perfect for the wedding season. We, at GRADO, hope to adapt to the changing trends and provide our customers with best quality fabrics."

Vikram Mahaldar, MD & CEO, OCM Pvt. Ltd., added, "With an illustrious heritage (of close to a century), we have always pioneered to disrupt the market with great quality and innovative products. We're extremely delighted about the Summer Collection with our vast array of colours - suitable for everyone - children, teens, working people, retired people - really, there's something for everyone. In 2021, we're sure this Collection will bring a further ray of hope/vibrancy in everyone's lives."

Links: Grado fabrics

- Twitter: https://twitter.com/GradoFabrics
- Facebook: https://www.facebook.com/GradoFabrics/
- Instagram: https://www.instagram.com/gradofabrics/

About GRADO

The brand GRADO is a coming together of synergies from legacy brands Grasim (erstwhile Gwalior Suitings) and OCM, with an intent to offer the entire product basket to the consumers - ranging from poly-viscose to cottons to worsted, under the same brand umbrella. GRADO had one of the greatest celebrities of Indian cinema, Mr. Amitabh Bachchan as the Brand Ambassador. GRADO caters to maximum product segments and across a range of price; so there is comfort and style for everyone. The product positioning and price points plays an important role in increasing potential for trade thereby, increasing not only the retail size, but stirring the consumer thought set too.

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Upgradation of Fashion education

Ways in which fashion education can be revamped with new-age tech in post-Covid-19 era

Background : With the pandemic binging about a tremendous change in daily business operations, employers are shifting gears and are eyeing only the blue-eyed talents. In the year 2021, sectors like Hospitality and Travel, Retail marketing, Automobile, Education are certainly going to shine due to new norms and online businesses being adopted by people. But has Fashion education/ courses beneficial to the students who want to take up higher education considering the new-age tech involved to learning.

Talk-points :

- Future of Fashion education in the post covid era
- New practices adopted by fashion institutes

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Story Ideas of ITM Group of Institution

Story Idea 1 : The rise in demand for Techno-professionals has surged in the covid era

Background : Digitalization has cast its spell on the entire world, especially during the pandemic where businesses have moved online. There is an increase in demand for websites, applications that are essential to run a business. Techno-professionals are required wherein they can handle the business with hands on Data Security and Information Security. This outbreak also has shown us how important is data security, which was also a primary reason why several apps were banned in India. Various companies are open to hire people with knowledge

on cloud computing, data security, and it is a career which would help students become state-of-the-art professionals in the near future. Web development combined with ethical hacking would serve as pioneering skills for untwining the web created by the online hackers.

Talk points :

- The need of the hour : front & back end developers in the post covid timeline.
- How to develop skills that would help businesses from malicious cyber attacks?
- How Covid-19 has fueled the raging fire of demand in software development and information security professionals?
- As career paths, which institutes offer better hands on specializations in various domains like Information security/Cyber security/Cloud computing/Networking, etc.

Story Idea 2 : Why has fashion design as a career domain been overshadowed by other professional programs?

Background : Fashion has always been a talk-to point, be it in any aspect, people choose to be fashionable. During present times where the pandemic has trapped everyone inside homes, even while following safety measures people do not prefer leaving the fashion quotient, for example : Everybody prefers wearing a designer mask that would match with their outfit. There are students who possess creative skills, a knack for sketching and designing new products/outfits, an eye for style and colors, but end up choosing other career options due to lack of proper career guidance and lack of employment opportunities.

Talk points :

- If students with the appropriate skills invest in the right career, they would create wonders out of their artistry.
- What role does an institute play in order to mould the career of a fashion designing aspirant.
- How will a crisis like covid-19 shape the future of the fashion industry?
- Why are aspirants ready to forgo their interest in designing, in the name of other professional sectors? And what can be done to guide them better?

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Despite challenges impacted by Covid-19 Oerlikon enabled to fulfil customers' order; First Sustainability Report published; Ordinary dividend payout of CHF 0.35 per share

- Resilient Group 2020 performance in highly challenging end markets due to COVID-19; Manmade Fibers delivered stable results; Surface Solutions top line impacted by pandemic-weakened end markets; swiftly executed cost-out actions position company for the future.
- First Sustainability Report underlines Oerlikon's sustainability credentials and commitment to ESG.
- Board will propose an ordinary dividend of CHF 0.35 per share at the AGM.
- Outlook for 2021: Group sales between CHF 2.35–2.45 billion and operational EBITDA margin of 15.5–16.0%.

Key Figures of the Oerlikon Group as of December 31, 2020 (in CHF Million)

	FY 2020	FY 2019	Δ	Q4 2020	Q4 2019	Δ
Order intake	2 241	2 590	-13.5%	642	612	4.9%
Order backlog	581	583	-0.5%	581	583	-0.5%
Sales	2 258	2 593	-12.9%	626	636	-1.5%
Operational EBITDA[1]	320	393	-18.5%	111	87	27.9%
Operational EBITDA margin[1]	14.2%	15.1%	–	17.7%	13.7%	–
Operational EBIT[1]	116	193	-39.7%	59	34	75.4%
Operational EBIT margin[1]	5.2%	7.4%	–	9.5%	5.3%	–
Result from continuing operations[1]	38	110	-65.5%	–	–	–
Net result	38	-662	n.a.	–	–	–
ROCE (rolling 12-month)	3.1%	7.0%	–	3.1%	7.0%	–

[1]For the reconciliation of operational and unadjusted figures, please see tables I and II on page 2 of this media release. 2 Includes CHF 284 million (noncash) cumulative translation differences and other items from other comprehensive income from the divestment of Drive Systems.

"Despite a challenging market environment heavily impacted by the pandemic, we reacted swiftly and executed well in 2020," said Dr. Roland Fischer, CEO Oerlikon Group. "Our global and regional footprint and supplier network enabled us to fulfill customers' orders and needs even during the lockdowns."

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"Surface Solutions was heavily impacted by COVID-19, but our swiftly executed cost-out actions protected and improved our profitability in the second half of the year and position us for the future. For Manmade Fibers, we maintained our 2019 top line at around CHF 1.1 billion despite challenges posed by the pandemic," added Dr. Fischer. "Based on our resilient 2020 performance, the Board will propose at the AGM a dividend payout of CHF 0.35 per share."

"Today marks another key milestone as we publish our first Sustainability Report," said Dr. Fischer. "Sustainability has always been an integral part of Oerlikon. Helping our customers in key industries achieve more with less is an intrinsic part of our value proposition, our technologies and operations. Our report details our contributions and signifies our commitment to further contribute to the environmental, social and governance goals that are material to our stakeholders."

"Assuming markets remain stable, and there are no further significant disruptions from COVID-19, we expect Group sales to be between CHF 2.35 billion to CHF 2.45 billion and a 15.5% to 16.0% operational EBITDA margin in 2021," concluded Dr. Fischer.

Resilient Group Performance in Highly Challenging Market Environment

Oerlikon delivered resilient results in an extraordinarily challenging year. While the Manmade Fibers Division delivered stable results, the Surface Solutions Division felt the impacts of pandemic-weakened end markets, particularly in the aerospace sector.

In 2020, Group order intake, including a 4.9% adverse currency impact, was CHF 2 241 million. Compared to the previous year, order intake decreased by 13.5% from CHF 2 590 million. Order backlog slightly decreased by 0.5% to CHF 581 million at year-end 2020 versus CHF 583 million at year-end 2019. Group sales were 12.9% lower in 2020 at CHF 2 258 million compared to CHF 2 593 million in 2019. At constant exchange rates, sales were at CHF 2 371 million.

In 2020, the Surface Solutions Division generated 53% of Group sales and 55% of Group operational EBITDA, while the Manmade Fibers Division accounted for 47% of Group sales and 47% of Group operational EBITDA.

Oerlikon saw sales growth in China, attributed to the manmade fibers business, while sales declined in the other regions. Asia-Pacific continued to account for the largest proportion of Group sales in 2020. Sales in Asia-Pacific slightly increased to CHF 1 208 million, or 53% of Group sales, versus CHF 1 203 million, or 46% of Group sales, in 2019. Europe was the second-largest regional contributor to Group sales in 2020, with sales totaling CHF 716 million, or 32% of sales, compared with CHF 897 million, or 35% of sales, in 2019. Group sales in North America totaled CHF 271 million, or 12% of Group sales, in 2020, versus CHF 394 million, or 15% of Group sales, in 2019. Sales in other regions decreased to 3% of Group sales in 2020 with sales of CHF 62 million, compared to CHF 99 million in 2019. The Group generated 35% of its revenue from services in 2020 (2019: 38%).

Successfully Executed Cost-Out Actions Protected Operating Profitability

Group operational EBITDA margin was 14.2%, which was only 0.9% points lower than the 15.1% in 2019, underlining the impacts of cost-out actions. Operational EBITDA was CHF 320 million, compared to CHF 393 million in 2019. Operational EBIT margin was 5.2% (CHF 116 million), compared to 7.4% (CHF 193 million) in the previous year.

Group unadjusted EBITDA decreased 21.3% to CHF 288 million, or 12.7% of sales, while Group unadjusted EBIT was CHF 73 million, or 3.2% of sales. In 2019, unadjusted Group EBITDA was CHF 366 million, or 14.1% of sales, and EBIT was CHF 164 million, or 6.3% of sales. The reconciliation of the operational and unadjusted figures can be seen in the tables below.

Table I : Reconciliation of Q4 2020 and FY 2020 Operational EBITDA and EBITDA[1]

In CHF million	Q4 2020	Q4 2019	FY 2020	FY 2019
EBITDA	108	67	288	366
Expenses related to restructuring	2	-18	-22	-21
Expenses related to discontinued activities	-6	-2	-10	-7
Operational EBITDA	111	87	320	393

Table II : Reconciliation of Q4 2020 and FY 2020 Operational EBIT and EBIT[1]

In CHF million	Q4 2020	Q4 2019	FY 2020	FY 2019
EBIT	53	14	73	164
Expenses related to restructuring	2	-18	-22	-21
Expenses related to discontinued activities	-6	-2	-12	-8
Impairment charges	-3	0	-9	–
Operational EBIT	59	34	116	193

[1] All amounts (including totals and subtotals) have been rounded according to normal commercial practice. Thus, adding together the figures presented can result in rounding differences.

The Oerlikon Group income from continuing operations in 2020 was CHF 38 million, compared with CHF 110 million in 2019, a decrease of 65.5%. As there were no effects from discontinued operations in 2020, net profit amounted to CHF 38 million in 2020, or earnings per share of CHF 0.11, versus CHF -66 million,

or earnings per share of CHF -0.21, in 2019. The tax expense for 2020 was CHF 22 million, while in 2019, it was CHF 39 million.

As of December 31, 2020, Oerlikon had total assets of CHF 3 340 million, compared to CHF 3 647 million at year-end 2019. The Oerlikon Group had equity (attributable to shareholders of the parent) of CHF 1 324 million, representing an equity ratio of 40%.

Q4 2020: Strong Operating Profitability, Driven by High Year-End Demand

Order intake increased 4.9% year-on-year to CHF 642 million (Q4 2019: CHF 612 million). Group sales were 1.5% lower at CHF 626 million (Q4 2019: CHF 636 million).

Group operational EBITDA improved by 27.9% to CHF 111 million, or 17.7% of sales (Q4 2019: CHF 87 million, or 13.7% of sales). Q4 2020 Group operational EBIT was CHF 59 million, or 9.5% of sales (Q4 2019: CHF 34 million, or 5.3% of sales). The operational margin improvements are attributed to cost actions and to the higher demand for equipment toward the end of the year. Group Q4 unadjusted EBITDA was CHF 108 million, or 17.2% of sales (2019: CHF 67 million; 10.5%), and unadjusted EBIT was CHF 53 million, or 8.5% of sales (2019: CHF 14 million; 2.2%)

First Sustainability Report

Sustainable innovation is an integral part of Oerlikon's strategy and built into everything the company does. Oerlikon is now making a public commitment and publishing its first Sustainability Report. It is joining the ranks of corporations, people and organizations that proactively engage in sustainability and inspire others to do the same. Based on the materiality analysis, Oerlikon has selected 8 out of the 17 United Nations Sustainable Development Goals (SDGs) where the company can make the most difference for its stakeholders. Environmental, social and governance targets for 2030 have been set by the Group in areas that align most closely with its operations, policies and capabilities. For further details, refer to www.sustainability.oerlikon.com.

Board Member Change

Current Board member, Geoffery Merszei, who has served on the Oerlikon Board of Directors since 2017, has decided not to stand for reelection. The Board of Directors thanks him for his valuable contributions to Oerlikon. The Board is proposing Jürg Fedier as a new nominee to the Board for election at the 2021 Annual General Meeting of Shareholders (AGM) on April 13, 2021. All other Board members will be standing for reelection at the AGM.

Jürg Fedier (1955, Swiss citizen) was Chief Financial Officer of the Oerlikon Group from January 2009 to December 2019. From 2007 to 2008, he acted as CFO of Ciba, Switzerland. Prior to that, Jürg Fedier held senior financial management position at Dow Chemical for 30 years, the latest as Head of Finance of Dow Europe and a member of its Executive Board. Jürg Fedier holds a Commercial Diploma from the College of Commerce in Zurich, Switzerland, and completed international executive management programs at IMD, Lausanne, Switzerland, and the University of Michigan, USA.

Dividends

Oerlikon is committed to providing attractive returns to shareholders while maintaining financial flexibility to invest in growth. In line with this strategy, the Board will recommend to shareholders to maintain an ordinary dividend payout as in the previous three years of CHF 0.35 per share at the Annual General Meeting of Shareholders (AGM) on April 13, 2021, in Pfäffikon, Switzerland.

Outlook: Structural Programs to Improve Mid-Term Margins

The structural programs implemented in 2020 are expected to support mid- and long-term improvement in operating profitability and drive the Group's EBITDA margin toward 16% to 18%. Assuming the COVID-19 pandemic does not cause further major disruptions and markets continue to improve as vaccination programs are successful, Oerlikon expects sales of CHF 2.35 billion to CHF 2.45 billion and operational EBITDA margin of 15.5% to 16.0% in 2021.

Division Overview

Surface Solutions Division

Key Figures of the Surface Solutions Division as of December 31, 2020 (in CHF Million)

	FY 2020	FY 2019	Δ	Q4 2020	Q4 2019	Δ
Order intake	1 144	1 468	-22.1%	315	359	-12.2%
Order backlog	124	181	-31.5%	124	181	-31.5%
Sales (to third parties)	1 197	1 488	-19.6%	330	369	-10.7%
Operational EBITDA	177	253	-30.2%	76	67	12.3%
Operational EBITDA margin	14.7%	16.9%	–	22.9%	18.2%	–

Surface Solutions was impacted by market weakness intensified by the pandemic. Effective cost-out programs were successfully executed and helped to protect operating profitability. Market recovery was noted in automotive and tooling in the second half of the year, while aerospace faced prolonged pandemic-induced weakness.

Orders for the Division were CHF 1 144 million, down 22.1% from the prior year's CHF 1 468 million. Division sales at CHF 1 197 million, down 19.6% from the CHF 1 488 million in 2019. At constant exchange rates, Division sales were CHF 1 261 million.

Operational EBITDA was CHF 177 million, or 14.7% of sales, compared to CHF 253 million, or

CORPORATE NEWS

16.9% of sales in 2019. Sequentially, the operational EBITDA margin improved, reflecting the positive impacts of the restructuring programs. The structural components of the program are expected to yield mid- to long-term improvements in the Division's operating profitability. Unadjusted EBITDA was CHF 144 million, or 12.0% of sales, compared to CHF 234 million, or 15.6% of sales in 2019. Operational EBIT in 2020 was CHF 10 million in 2020, or 0.9% of sales (2019: CHF 86 million, or 5.8% of sales), and unadjusted EBIT was CHF -32 million, or -2.7% of sales (2019: CHF 65 million, or 4.4% of sales).

Toward the end of 2020, the Division acquired the thermal insulation systems business from Crosslink GmbH, Germany, to add thermal insulation material solutions to the portfolio to further strengthen the participation in the growing market for battery electric vehicles.

Manmade Fibers Division

Key Figures of the Manmade Fibers Division as of December 31, 2020 (in CHF Million)

	FY 2020	FY 2019	Δ	Q4 2020	Q4 2019	Δ
Order intake	1 097	1 122	-2.3%	326	252	29.3%
Order backlog	457	403	13.4%	457	403	13.4%
Sales (to third parties)	1 061	1 106	-4.0%	296	267	11.2%
EBITDA	151	145	3.6%	47	26	81.2%
EBITDA margin	14.2%	13.2%	–	15.7%	9.6%	–

The Division delivered a strong performance in 2020 despite the pandemic. After securing record wins for filament equipment at the beginning of 2020 (total value of more than CHF 600 million), the Division proved to be highly resilient for the remainder of the year, even after the outbreak of COVID-19. The nonwoven business benefited from the unanticipated surge in demand for protective wear and masks.

Sales and orders for manmade fibers systems both exceeded CHF 1 billion for the year, and the Division has full order books for filaments and nonwovens equipment for the next two years and the books are being filled into 2023.

Year-over-year, order intake decreased slightly by 2.3% to CHF 1 097 million compared to CHF 1 122 million in 2019. Sales also decreased slightly by 4.0% to CHF 1 061 million, compared to CHF 1 106 million in 2019. At constant exchange rates, sales were CHF 1 110 million.

The Division delivered stable double-digit profitability. Operational EBITDA improved year-over-year to CHF 151 million, or 14.2% of sales, compared to CHF 145 million, or 13.2% of sales, in 2019. Unadjusted EBITDA was CHF 150 million, or 14.1% of sales (2019: CHF 144 million, 13.0%). Operational EBIT for 2020 was CHF 120 million (2019: CHF 119 million), or 11.3% of sales (2019: 10.8%). Unadjusted EBIT was CHF 118 million (2019: CHF 117 million), or 11.2% of sales (2019:10.6%).

In the first quarter of 2020, the Manmade Fibers Division took over the majority stake in the joint venture Teknoweb Materials S.r.l. to extend the nonwoven production system portfolio for disposable nonwovens. This move strengthened the Division's position in the nonwoven market.

FY2020

These documents can be downloaded from Oerlikon's website:

2020 Annual Report	www.oerlikon.com/annualreport-2020
2020 Sustainability Report	www.sustainabilityreport.oerlikon.com
FY2020 media release (incl. full set of tables)	www.oerlikon.com/pressreleases www.oerlikon.com/en/investor-relations
The analyst presentation and equity story	www.oerlikon.com/en/investors/reports-publications

About Oerlikon

Oerlikon (SIX: OERL) is a global innovation powerhouse for surface engineering, polymer processing and additive manufacturing. The Group's solutions and comprehensive services, together with its advanced materials, improve and maximize performance, function, design and sustainability of its customer's products and manufacturing processes in key industries. Pioneering technology for decades, everything Oerlikon invents and do is guided by its passion to support customer's goals and foster a sustainable world. Headquartered in Pfäffikon, Switzerland, the Group operates its business in two Divisions – Surface Solutions and Manmade Fibers. It has a global footprint of more than 10 600 employees at 179 locations in 37 countries and generated sales of CHF 2.3 billion in 2020.

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ITM 2022

ITM Exhibition Postponed, New Dates : 14-18 June 2022

ITM International Textile Machinery Exhibition, which is planned to be held on June 22-26, 2021 postponed to June 14-18, 2022, considering the effects of the ongoing Covid-19 pandemic in the world. This postponement decision was taken as a result of intense discussions and evaluations with participants and sector representatives.

The ITM Organization Team made the following statements: "Our priority is to protect valuable exhibitors and visitors' investments and all rights, not our commercial earnings. In this regard, we believe that all of our participants will find this compulsory postponement decision taken for the ITM Exhibition justified and will understand."

ITM 2022, which will be held with partnership of Tüyap Tüm Fuarcılık INC. and Teknik Fuarcılık INC. in cooperation with TEMSAD, will organize at Istanbul Tuyap Fair and Congress Center on June 14-18, 2022.

ITM 2022 Prepares to Break New Records

The latest ITM Exhibition hosted the world textile industry with 1200 exhibitors from 64 countries and 60,000 visitors from 94 countries. ITM 2022 Exhibition is preparing to break new records as one of the most important global organizations to be held after the pandemic period.

Hundreds of companies participating in the ITM 2022 will have the opportunity to introduce their latest technological innovations and products to tens of thousands of visitors in Istanbul for 5 days.

ITM 2022, where world textile machinery manufacturers and investors will meet; it will direct the textile machinery sector in terms of launches and new ideas to be organized by companies.

Organization team hopes to see exhibitors and visitors at ITM 2022, where the newest technologies to be exhibited by meeting with Great Ideas.

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Exhibition on DyeChem & Knit process to be held on Oct 22-24, 2021 in Tirupur

Tirupur To Host DyeChem World, Knit Process Exhibition and CEO Summit; NIFT-TEA and AIC NIFT TEA Collaborate with Textile Excellence

SDC International India Pvt Ltd is co-organiser of the events

Tirupur's NIFT-TEA College of Knitwear Fashion, AIC NIFT TEA Incubation Centre for Textiles and Apparels and Textile Excellence have signed a MOU to jointly organize the twin exhibitions - DyeChem World and Knit Process, in Tirupur, from October 22-24, 2021. The event will be held at NIFT-TEA College Compound SIDCO, Tirupur. SDC International India Pvt Ltd(SDC I) has also joined hands as a co-organizer.

TEXTILE EVENTS

Tirupur, the knitwear capital of India, accounts for 60% of India's knitting, processing and apparel capacity and leads the path in re-starting textile and apparel business through the pandemic because of its resilience. The city alone accounted for exports of Rs 24,750 crore (approx. US$ 3.5 billion) knitwear in 2019-20 which was 46.50% of India's knitwear export basket. The Tirupur cluster has nearly sailed through the pandemic induced challenges with the help of government policy interventions; and is now turning to new investments. Strategic relook by retailers and brands on sourcing destinations after the pandemic, American embargo on knitwear made from Chinese cotton and currency exchange rate induced competitiveness brings a silver lining to Tirupur's next level of growth in capacity. By the

next year, Tirupur's knitwear industry is set to cross Rs. 50,000 crore industry mark and in five years, Tirupur could double its a capacity and exports from its current size. It is to be noted that Tirupur's knitwear sector is investing in the latest high-end knitting, wet processing and garment technologies that complies with sustainable norms. Tirupur is among the first Indian apparel clusters to have invested in CETPs and environmental technologies for clean energy, chemical management and clean production practices. Almost all knitwear units in the cluster are linked to CETPs or have their own ETPs.

Thus, to service the need of the industry in Tirupur and Southern India, DyeChem World will cover the entire range of textile dyes, chemicals, finishes, technologies. Being the first of its kind show in southern India, DyeChem World will create a platform for interaction and knowledge sharing between the dyes and chemicals and textile industry. On the other hand, Knit Process exhibition will help the industry to explore and adopt latest innovations in knitting and post processing sector, covering the entire value chain of knitwear processing technologies till garmenting.

The important highlight of the events will be the CEO Summit. The CEO Summit will be a gathering of head honchos from the global textile and apparel, fashion brands and retail industry. While primary aim of the meet is to have highly interactive and candid networking for business, it would also have serious deliberations on core issues of sustainable practices, sourcing and the adopting it to supply chain.

Speaking at the signing ceremony, Mr Raja Shanmugham, President, Tirupur Exporter's Association said, "Tirupur being India's largest knitwear cluster, our entrepreneurs invests in capacity enhancements and technology upgradation on regular basis. With the emerging opportunities and Prime Minister's call for Atmanirbhar Bharat, our industry is committed to take this cluster forward with further investments. Thus, weneed international eventsand supply chain interactions to achieve the goals".

According to Mr S Perisamy, CEO, AIC NIFT TEA, "A world class exhibition would promote entrepreneurship and innovationas well as help adoption of innovative ideas by our industry and its commercialization to stay competitive".

Mr Yogesh Gaikwad, Director, SDC International, UK & India, believes Tirupur is the apt venue for an event of this stature. "Tirupur has always been in the forefront in clean production, and has carved the path towards sustainable production, for the rest of the industry to follow. DyeChem World + Knit Process will be the ideal platform for product, technology and service providers to connect with the decision makers."

Commenting on the collaboration DJ Gohain, Director, Textile Excellence says, "India is among the top markets for modern textile machinery and processing technology. Indian textile and apparel industry's quest for state-of-the-art technology has established itself as a global player. Textile Excellence is committed to create a platform for marketers to interact with the industry and build sustainable business partnerships".

SDC International India Pvt Ltd as co-organizer

SDC International India Pvt Ltd(SDCI) is a co-organizer of Dyechem World. In this role, SDC I will also organize Training Programs on all three days of the event –details will be available on their website sdcil.com.

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"I met many major companies like Toyota Tsusho, 4°C, etc. I enjoyed exhibiting even remotely. Online meetings were new and fresh!" (Megbydesign Clothing Pvt. Ltd., Australia)

"We had so many business discussions than I expected. I regret that I only prepared a minimum number of catalogues and samples." (Eco Park - US, South Korea)

"I am very greatful that I was able to have business talks with international buyers through Remote Exhibiting. Show Management was very supportive." (Talwantrade.com, Taiwan)

2. Featured on TV! — Fashion World Tokyo attracted a great deal of attention in the media

2020 October show were broadcasted on Japanese major TV stations. TV stations : Fuji*, TBS*, tv asahi*, Abema TV, etc. (*Japanese major TV stations)

In Fashion World Tokyo, we have the dedicated area of "Antivirus" and "Sustainable" products, which caught much attention of the media. Check details of "Antivirus Zone".

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Oerlikon

Wolf PVG lays trust in meltblown technology from Oerlikon Nonwoven

Oerlikon Nonwoven has successfully commissioned a double-beam meltblown plant with ecuTEC+ electro charging unit at Wolf PVG GmbH & Co. KG. With this plant, the East Westphalian company can now provide nonwovens for the production of surgical and FFP2 masks. In addition to this filter material, which is in great demand today, highquality meltblown nonwovens can also be produced for medical and industrial filter applications. The plant has now been running for several weeks under stable production conditions with optimal nonwoven fabric quality of the highest standards.

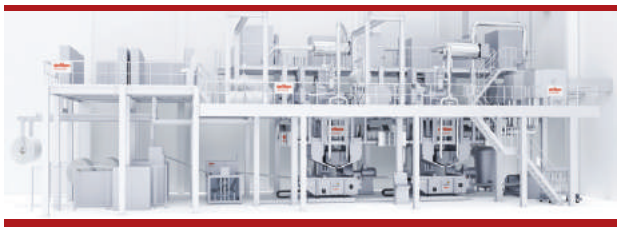
Markus Seele, COO Wolf PVG, and Andreas Schnell, Head of Nonwoven Production Wolf PVG, trust in the meltblown technology from Oerlikon Nonwoven.

With the beginning of the corona pandemic and the shortage of protective masks that ensued, Wolf PVG GmbH & Co. KG, a wholly-owned subsidiary of the Melitta Group, switched part of its production capacities to nonwoven mask fabric production. As a highly specialised system supplier for everything to do with vacuum cleaners and industrial filter technology, the company from East Westphalia can fall back on its extensive know-how and many years of experience.

With the meltblown plant from Oerlikon Nonwoven, Wolf PVG is further expanding its production capacities. The plant, with its two beams and the ecuTEC+ electro charging unit, is optimally designed for the production of face mask material. The plant is also ideal for the production of other filtration nonwovens. “A decisive point for investing in a plant from Oerlikon Nonwoven was the flexibility of the plant in relation to the possible product portfolio and the competence of the manufacturer,” explains Markus Seele, COO of Wolf PVG. And Dr. Ingo Mählmann, Senior Vice President Sales & Marketing Oerlikon Nonwoven, adds: "Thanks to the numerous setting options for the electrostatic charge provided by the ecuTEC+, the optimum loading status can be set depending on the filter application."

ecuTEC+ electro charging unit from Oerlikon Nonwoven complements filter nonwoven plants

The meltblown technology from Oerlikon Nonwoven is considered the most technically efficient process for the production of highly effective filter media from plastic fibres. The ecuTEC+ electro charging unit also makes a



Oerlikon Nonwoven double-beam meltblown system – here with integrated ecuTEC+ for electrostatically-charging the filter media.

significant contribution to this. With the patented process, spunbond and meltblown materials can be charged electrostatically and thus the filter performance can be significantly increased. In this way even the smallest particles are safely filtered. Nonwoven manufacturers are thereby largely free to choose and can set the optimal charging method and intensity for their filter application.

Oerlikon Barmag Huitong Engineering introduces its first PBS system in China

A polybutylene succinate (PBS) polycondensation system was commissioned at Yingkou Kanghui Petrochemical Co. Ltd. in Dalian in the Chinese Liaoning Province at the beginning of January 2021. The PBS system, for which Oerlikon Barmag Huitong Engineering supplied both equipment and engineering, has a daily production capacity of 100 tons.

It is used to manufacture high-viscosity chips for biodegradable films. Consequently, Yingkou Kanghui, a subsidiary of the Hengli Group, is catering to rising demand for biodegradable polymer products – demand that is increasing not just in China, but across the globe. Yingkou Kanghui Petrochemical Co., Ltd., founded in 2011, predominantly produces polyester chips and films. By expanding its portfolio to include the manufacture of PBS products, the enterprise is positioning itself as a pioneer of biopolymer production: In view of the large quantities of plastic waste not just in the oceans, biopolymers are considered the materials of the future.

The PBS system at Yingkou Kanghui Petrochemical Co. Ltd. was production-ready within just 14 months. Initially, the company will use the new equipment to produce the biodegradable copolymer polybutylene adipate terephthalate (PBAT).

The new plant at Yingkou Kanghui Petrochemical Co, Ltd. was production-ready with the support of Oerlikon Barmag Huitong Engineering within less than 14 months following contract signing.

Oerlikon Neumag holds right approach with BCF S8 carpet system

BCF S8 Tricolor meets the need for the trend towards multiple colours

Oerlikon Neumag has found the right approach for its customers with the efficient BCF S8 carpet yarn system in Monocolor and Tricolor versions. Their solution is once again in the spotlight at this year's DOMOTEX asia / CHINAFLOOR from March 24 – 26, 2021 in Shanghai. Their audience of professionals can see the advantages for themselves at Oerlikon Neumag exhibition stand W3 D26.

Whether Monocolor or Tricolor, the performance data and technological details of the BCF S8 versions have already made a huge impression at numerous exhibitions and road shows: With up to 700 filaments per thread, the BCF S8 significantly outperforms its sister, the BCF S+ (400 filaments), also guaranteeing finer titres of up to 2.5 dpf. In addition to that, the process speed of the new Witras III-37 winder is higher than ever at 3,700 m/min – and provides increased throughput of up to 15 percent in comparison to previous technologies. The bottom line is a system efficiency of 99 percent, as well as possible energy savings of up to 5 percent per kilogramme of yarn.

The BCF S8 sets new standards for colour separation.

The BCF S8 Tricolor version is all you need

From a mélange to strict separation – the trend towards multiple colours for carpets goes on. The options for differentiating product for carpet yarn manufacturers are better than ever with the BCF S8 due to even more flexible colour mixture versions. More than 200,000 different colour shades derived from three colours are provided by the core component of the process, the new patent-pending CPC-T (Colour Pop Compacting unit).

About Oerlikon

Oerlikon (SIX: OERL) engineers materials, equipment and surfaces and provides expert services to enable customers to have high-performance products and systems with extended lifespans. Drawing on its key technological competencies and strong financial foundation, the Group is sustaining mid-term growth by addressing attractive growth markets, securing structural growth and expanding through targeted mergers and acquisitions. A leading global technology and engineering Group, Oerlikon operates its business in two Divisions – Surface Solutions and Manmade Fibers – and has a global footprint of around 11 000 employees at 182 locations in 37 countries. In 2019, Oerlikon generated CHF 2.6 billion in sales and invested more than CHF 120 million in R&D.

For further information: www.oerlikon.com

About the Oerlikon Manmade Fibers division

With its Oerlikon Barmag, Oerlikon Neumag and Oerlikon Nonwoven brands, the Oerlikon Manmade Fibers division is one of the leading providers of manmade fiber filament spinning systems, texturing machines, BCF systems, staple fiber systems and solutions for the production of nonwovens and – as a service provider – offers engineering solutions for the entire textile value added chain. As a future-oriented company, the research and development at this division of the Oerlikon Group is driven by energy-efficiency and sustainable technologies (e-save). With its range of polycondensation and extrusion systems and their key components, the company caters to the entire manufacturing process – from the monomer all the way through to the textured yarn. The product portfolio is rounded off with automation and Industrie 4.0 solutions. The primary markets for the product portfolio of Oerlikon Barmag are in Asia, especially in China, India and Turkey, and – for those of Oerlikon Neumag and Oerlikon Nonwoven – in the USA, Asia, Turkey and Europe. Worldwide, the division – with more than 3,000 employees – has a presence in 120 countries with production, sales and distribution and service organizations. At the R&D centers in Remscheid, Neumünster (Germany) and Suzhou (China), highly-qualified engineers, technologists and technicians develop innovative and technologically-leading products for tomorrow's world.

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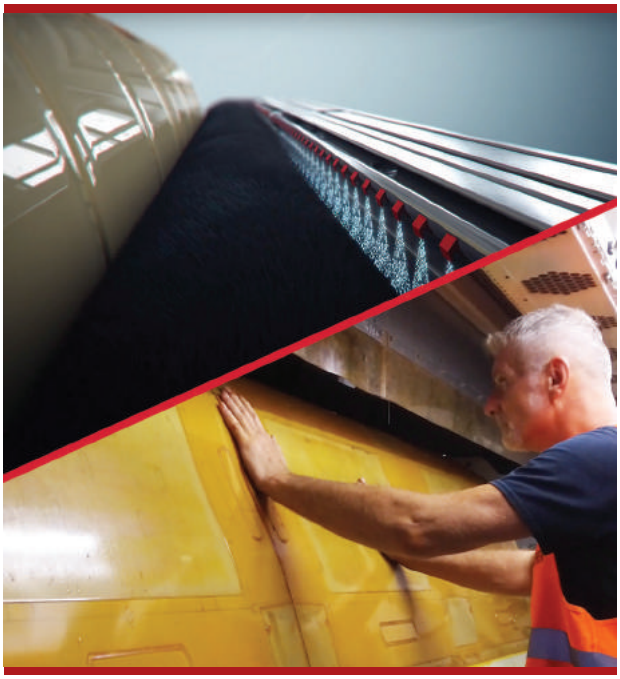
Baldwin Technology Company Inc.

Baldwin hosted free webinar on automated cleaning of high-graphics presses

Corrugated printers can attend a live session hosted in German or view a recorded English session

Baldwin Technology Company Inc. has invited corrugated printers to a free webinar hosted in German on February 25. The live educational session—which will be recorded for later viewing—will present corrugated cleaning trends, challenges, needs and solutions. An English version of the webinar is available on-demand as well.



Baldwin's unique FlexoCleanerBrush achieves unparalleled automatic cleaning results on high-graphics corrugated printing presses

"In free webinar, corrugated printers have seen comparisons of manual and automatic cleaning, as well as cloth versus brush technology," said Michael Stürmer, Vice President of Product Line Cleaning at Baldwin and webinar subject matter expert. "The corrugated business is booming, and because there are many companies, printers need to differentiate themselves by speeding up production and enhancing production quality."

Webinar attendees also learnt more about Baldwin's cleaning technologies and how they can improve sustainability, safety, production speeds, waste reduction and more. Baldwin's

FlexoCleanPick and FlexoCleanerBrush automate common cleaning tasks, like hickey-picking and end-of-run cleaning. In fact, with the FlexoCleanerBrush, printers can pick hickeys in seconds and run complete full-plate cleaning programs in minutes.

ABOUT BALDWIN TECHNOLOGY COMPANY INC.

Baldwin Technology Company Inc. is a leading global manufacturer and supplier of innovative process-automation equipment, parts, service and consumables for the printing, packaging, textile, plastic film extrusion and corrugated industries. As a total solutions provider, Baldwin offers our customers a broad range of market-leading technologies, with a focus on improving the economic and environmental efficiency of production processes. Through a global footprint of 21 company-owned locations and an extensive network of partners, our customers are supported globally, regionally and locally by dedicated sales and service team members who add value by forming long-term relationships. Baldwin is privately owned by BW Forsyth Partners, a Barry-Wehmiller company. For more, visit baldwintech.com.

ABOUT BW FORSYTH PARTNERS

BW Forsyth Partners is the investment arm of multibillion-dollar global manufacturing and engineering consulting firm Barry-Wehmiller. Established in 2009, BW Forsyth Partners blends Barry-Wehmiller's unparalleled legacy of value creation and people-centric culture development with keen investing experience to help companies realize their true potential. With a focus limited to areas known well, BW Forsyth Partners seeks to partner with leadership teams to acquire small- to middle-market companies in the capital and component equipment, and professional services sectors. In each of our operating companies, BW Forsyth Partners deploys operational improvements and strategy development without compromising the autonomy, strategic vision and entrepreneurial spirit of their leadership teams. For more information, visit bwforsyth.com.

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Lenzing Group

Lenzing showcased pioneering TENCEL™ Modal fiber with Indigo Color technology to help elevate sustainability in the denim industry

- TENCEL™ branded modal fiber with Indigo Color technology uses a one-step spun-dyeing process to deliver indigo color whilst using substantially fewer resources.
- TENCEL™ Modal fibers with Indigo Color technology are awarded with the EU Ecolabel for meeting high environmental standards.

The Lenzing Group is enhancing sustainable offerings for the denim industry with TENCEL™ branded modal fibers with Indigo Color technology. The pioneering Indigo Color technology behind this new market offering incorporates indigo pigment directly into TENCEL™ branded modal fibers using a one-step spun-dyeing process. This delivers superior color fastness relative to conventional indigo dyeing whilst using substantially fewer resources. This innovative offering is awarded with the EU Ecolabel, a label of environmental excellence awarded to products meeting high environmental standards throughout their life cycle.

Development of Indigo Color technology to enhance denim sustainability

The denim industry's demand for eco-responsible alternatives is growing rapidly, as brands and supply chain partners seek greater sustainability. Lenzing has been working closely with such partners to counteract environmentally

harmful denim production processes via the botanic origin of its raw materials and responsible production processes.

Denim remains an important market for Lenzing, and the introduction of TENCEL™ Modal with Indigo Color technology is designed to help reduce the ecological footprint of denim fabrics and garments. Produced in Austria, predominantly from beech wood derived from sustainably managed wood sources, this new offering has been designated BioPreferred® by the United States Department of Agriculture (USDA).

"Innovation is at the core of what we do, from sustainable fiber sourcing through industry leading features and production processes, with the ever-present goal of safeguarding our environment," says Florian Heubrandner, Vice President Global Textiles Business at Lenzing AG. "By upending traditional manufacturing processes and implementing our pioneering technology along with renewable and eco-responsible materials, TENCEL™ Modal with Indigo Color technology sets a new benchmark for indigo application and sustainability in the denim industry."

Among early launch collaborators for TENCEL™ Modal with Indigo Color technology is Adriano Goldschmied, founder of House of

Gold, who is widely regarded as the "Godfather of Denim" for his progressive vision in denim development. "The TENCEL™ brand is leading revolutionary change for the denim industry and it has always been one of my go-to eco-fibers for my collections," states Goldschmied. "We are thrilled to collaborate and launch the 'Seed of Joy' concept capsule with woven, circular and sweater knit fabrics using TENCEL™ Modal with Indigo Color technology, in partnership with mills such as Blue Diamond and In The Loop, as well as machinery producer Shima Seiki."

Indigo Color technology elevates production standards and significantly reduces waste

Indigo Color technology builds upon the strong credentials of TENCEL™ Modal fibers with new benefits. Compared to conventional indigo dyeing, the color retention of TENCEL™ Modal with Indigo Color technology is superior through dry and wet crocking and rubbing. Despite resistance to home-laundry fading, wash-down effects for denim products can be achieved using commercial laundry techniques. TENCEL™ Modal fibers with Indigo Color technology are inherently versatile and enable implementation in a range of multi-fiber blends.

Compared to water and energy intensive conventional indigo dyeing, this technology provides indigo coloration with substantial water, chemical and electricity savings, along with less wastewater produced, and no heat energy used. In addition, a specially commissioned indigo pigment from dyestuff manufacturer DyStar®, ensures that TENCEL™ Modal with Indigo Color technology can be certified with STANDARD 100 by OEKO-TEX®, guaranteeing ultra-low levels of aniline. Günther Widler, Head of Technology, Denim of DyStar® says, "This specially commissioned indigo pigment is based on more than a decade of our working experiences on Indigo Synthesis in Germany. Twenty-five years ago, we invented the most eco awarded DyStar® Indigo Vat 40% to meet the demand for sustainable manufacturing and production."

To make the commercial launch of TENCEL™ Modal with Indigo Color technology possible, Lenzing has partnered with leading supply chain partners including denim mills - Candiani and Cone Denim.

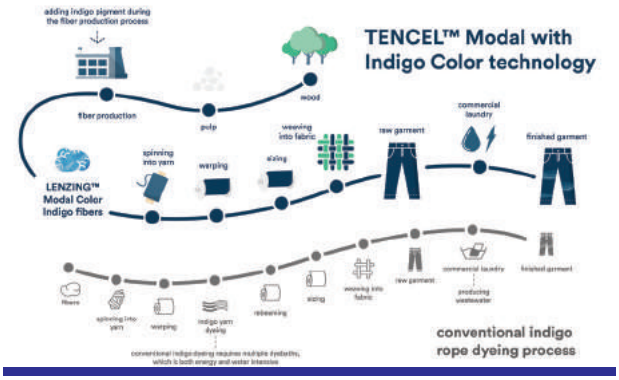
"With driving sustainability at our core, we look forward to a fruitful collaboration with the production of this eco-responsible fiber type," says Alberto Candiani, Global Manager of Candiani. "TENCEL™ Modal with Indigo Color Technology also represents a great product to expand denim's performances and aesthetics around sustainability itself."

Steve Maggard, President of Cone Denim, adds, "Lenzing has long been an industry leader in sustainable fibers. With consumers being more eco-conscious, the denim industry has to evolve and innovate in smarter materials to stay efficient and competitive. We are proud to partner with the TENCEL™ brand to launch Indigo Color technology for modal fibers and promote greater sustainability for denim."

About TENCEL™

TENCEL™ is the textile specialty brand under The Lenzing Group that covers textile specialty product fiber offerings for apparel and

home. The TENCEL™ product brand portfolio defines a new evolutionary step in terms of sustainability, functional benefits, natural comfort and caters for distinctive everyday usage or application. Product brands under TENCEL™ include TENCEL™ Active, TENCEL™ Denim, TENCEL™ Home, TENCEL™ Intimate, TENCEL™ Luxe and TENCEL™ for Footwear.



Featuring botanic origin and biodegradable quality, TENCEL™ Modal and TENCEL™ Lyocell fibers can enhance the breathability of fabrics and have a minimal static charge when used in fabrics. Fabrics made of TENCEL™ Modal and Lyocell fibers are also gentle on skin with smooth, long-lasting softness, color vibrancy and color retention features. TENCEL™ Lyocell fibers are versatile and can be combined with a wide range of textile fibers to enhance the aesthetics and functionality of fabrics. Through moisture management, TENCEL™ Lyocell fibers can also absorb moisture efficiently. Exhibiting high flexibility, TENCEL™ Modal fibers enhance textiles with a naturally soft quality. Offering endless design possibilities, TENCEL™ Modal fibers can be blended with other fibers and processed using conventional machinery, significantly improving the softness and comfort of fabrics.

Fibers used under the TENCEL™ brand are derived from certified and controlled sources following the stringent guidelines of the Lenzing Wood and Pulp Policy. Namely, TENCEL™ Modal and TENCEL™ Lyocell fibers, both cellulosic fibers are produced via environmentally responsible production processes and are compostable and biodegradable, thus can fully revert back to nature. TENCEL™ Modal and TENCEL™ Lyocell fibers are designated by the USDA (U.S. Department of Agriculture) BioPreferred® Program.

About the Lenzing Group

The Lenzing Group stands for ecologically responsible production of specialty fibers made from the renewable raw material wood. As an innovation leader, Lenzing is a partner of global textile and nonwoven manufacturers and drives many new technological developments.

The Lenzing Group's high-quality fibers form the basis for a variety of textile applications ranging from elegant ladies clothing to versatile denims and high-performance sports clothing. Due to their consistent high quality, their level of biodegradability and compostability, Lenzing fibers are also highly suitable for hygiene products and agricultural applications.

The business model of the Lenzing Group goes far beyond that of a traditional fiber producer. Together with its customers and partners, Lenzing develops innovative products along the value chain, creating added value for consumers. The Lenzing Group strives for the efficient utilization and processing of all raw materials and offers solutions to help redirect the textile sector towards a closed-loop economy.

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Uster Technologies AG

Clear choice: security, prevention and flexibility

Uster launches the new Quantum 4.0 yarn clearer

Which yarn clearing technology should spinners choose? Now there's only one answer, as Uster launches the new Quantum 4.0 clearer generation. This world-beating innovation combines both capacitive and optical sensors in one – delivering comprehensive security, prevention and flexibility.

The Smart Duo system offers the best of both worlds for intelligent yarn quality control and optimized profitability. It means mills can now focuson meeting the fast-moving market challenges, instead of pondering technical options.

Security and reliability: the basis of yarn quality

Quantum 4.0 is like a dream come true for the industry. For years, spinners have wished for

a way tobring the best of different technologies together, for secure quality and maximum flexibility.

Spinners can now access full security in quality control, ensuring the best clearing mode is applied. The Quantum 4.0 enables this through a simple Capacitive/Optical switch. This allows greater flexibility in the types of yarn which can be produced, while also dealing with factors such as humidity variations.

Intelligent sensors in tandem

The capacitive and optical sensors work intelligently in tandem through an innovation known as Cross Clearing. This locates and eliminates hidden defects by means of a double check, in which the main sensor's signal is supported by the assistance sensor. This deals with issues such as unnoticed fluff events, which might otherwise cause breaks downstream.

Today's market trends show strong demand for compact yarns. Here, spinners can trust Quantum 4.0 to tap this potential and deal with any quality issues. The density feature, for example, protects mills from substandard cops caused by ring spinning malfunctions such as blocked compacting zones, or twist problems. The Smart Duo has the advantage of monitoring yarn density continuously and after every splice. "No matter where density variations originate, be it compacting, different twist levels due to slip spindles or otherwise, Uster Quantum 4.0 takes care of it – and this is a real technical innovation," says Katrin Hofer, Product Manager at Uster Technologies.

No more material mix-ups

A further valuable innovation with Quantum 4.0 is the Blend Mix-up option, which now enables mills to identify mix-ups of different types of raw materials. This long-awaited market request detects any wrong raw material in greige and white yarns, combating the infamous, but serious, barré effect in fabrics. Cop mix-ups can happen in mills, since differences are hardly visible to the human eye. But Quantum 4.0 stops the problem before it becomes an issue, thanksto significantly improved hardware and software – all underpinned by the Smart Duo.

The higher processing power of the new sensors brings additional benefits such as the enhanced Continuous Core Yarn option, which detects both missing and off-center core continuously.

Innovations in Quantum 4.0 also focus on contamination, with deeper analysis of polypropylene and foreign matter. A new PP classification gives users the overview of polypropylene content, while the Advanced FD classification now shows extra classes below the 5% lines. Both these features add to the value of the contamination function, together with Total Contamination Control (TCC).

Quantum 4.0 gives spinners the ultimate confidence through the intelligent interaction of capacitive and optical sensor technology. It achieves 'one of a kind' security levels in basic clearing, while also cutting only what's necessary.

Prevention pays off

As well as identifying defects at winding, preventing defects at source is also in focus with the clearer's new Expert System. The

new Quantum Expert is now included in the product offering.Thanks to many added intelligent analytical features, the Uster Quantum Expert enhances process control and prevention of defects, through Total Contamination Control, Ring Spinning Optimization and the RSO 3D Value Module.

Latest innovations in the new clearer protect spinners from claims and waste– but enabling business success is the real purpose of Quantum 4.0. Latest clearing technologies work with Uster's unique data analysis to enable flexible data-based decisions using Application Intelligence. "Failure prevention is the key to success and tackling issues at source is the way to do it. Uster Quantum 4.0 plays an important role in this, offering options to strengthen it," says Hofer.

Secure and user-friendly

The secret of true innovation is how well it is designed through to the point of user interaction. No matter how much data – in terms of quantity and different parameters – is collected for analysis, Uster Quantum Expert manages the complexity, while staying as intuitive as ever.

With Quantum 4.0, a new central Smart-Limit button enhances flexibility, since operators can adjust all available smart limits with a single tap, based on the unique Yarn Body concept. Each individual limit can be simply fine-tuned as preferred.

Users enjoy the established Quantum workflows and embrace the new customer-centered user interface with a 16:9 touchscreen on the 7th generation control units`.

Nothing gets in the way of success with this prevention strategy. Uster recognizes that today's challenges are tough, can be overcome with prevention, security and flexibility on your side – and Quantum 4.0 on your winding machine.

About Uster Technologies

Uster is the world's leading provider of quality management solutions from fiber to fabric.

Uster Technologies offers high-technology instruments, systems and services for quality control, prediction, certification and optimization in the textile industry. This includes systems for quality management, laboratory testing and in-line process control for fibers, staple and filament yarns, fabric inspection as well as value-added services.

Uster provides the globally-acknowledged Uster Statistics benchmarks for trading, textile know-how training, consulting and worldwide after-sales services – always aspiring to fulfill the textile market's needs, to drive innovation forward with 'quality in mind'.

Uster Technologies AG is headquartered in Uster, Switzerland and operates worldwide. It has sales and service subsidiaries in the major textile markets and Technology Centers in Uster (Switzerland), Knoxville (USA), Suzhou (China) and Caesarea (Israel).

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❐

A.T.E. Enterprises Private Limited

A.T.E. teams up with W+D BICMA, Germany, to bring textile hygiene manufacturing technologies to India

The ongoing pandemic has brought renewed focus on the medical and hygiene segment in textiles. To help the Indian textile industry meet the rising demand for medical and hygiene textiles, A.T.E. has tied-up with one of the world's leading hygiene textile machine manufacturers– W+D BICMA Hygiene Technologie GmbH, Germany.

W+D BICMA supplies machines for manufacturing baby diapers, feminine care products, adult diapers, bladder control pads for incontinence, bed underpads, meatpads, pet pads and other specialised products such as surgical face masks and FFP2/N95 masks. Its portfolio comprises of compact high-speed multi-functional machines for high-capacity production and economical medium-speed machines for start-up businesses. Besides complete machines, W+D BICMA is a specialist in upgrading existing machines with new features to enhance machine efficiency and product design. W+D BICMA has successful installations at some of the world's most well-known brands.

During the pandemic, W+D BICMA designed a new high-speed machine in a short span of time which has the capability to produce 1 million face masks per day, called the Auxilium FM. BICMA also offers a high-speed machine that produces FFP2/N95 face masks.

A.T.E. is a trusted partner for the Indian textile industry for more than eight decades. This tie-up with W+D BICMA will help the Indian textile industry in a big way to expand its product offerings and ensure its due share in the growing medical and hygiene textile market.

SCIENCE IN INDUSTRY

About BICMA Hygiene Technologie Gmbh

Since its foundation in 1995, BICMA has established itself as an internationally recognised engineering company for the hygiene industry. In 2018, BICMA was taken over by Winkler+Dünnebier GmbH (W+D), which is also active in the hygiene solutions area. Both companies belong to the American Barry-Wehmiller Group, a leading global supplier of production technologies and solutions.

About Winkler + Dünnebier Gmbh (W + D)

Winkler+Dünnebier GmbH (W+D) offers a wide range of highly efficient, integrated system solutions for the mail and postal industry, as well as for the tissue and hygiene industry. With more than 100 years of industry-shaping innovations, W+D has core competence in the converting and processing of thin and in-homogeneous materials—such as paper, tissue and nonwovens—at high speeds and tight tolerances.

About Barry-Wehmiller

Barry-Wehmiller is a broad-based global provider of engineering, consulting and manufacturing technology solutions for the packaging, corrugated board and paper converting industries. Combining an employee-oriented leadership style with operational strategies and sustainable growth has made Barry-Wehmiller a USD 3 billion company whose more than 11,000 employees share a common vision: Building a Better World through Business.

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SUNRISE INDUSTRIES

New Tester to prevent damage of bobbins and warp beams

PACKAGE HARDNESS TESTER

This instrument is used to determine the hardness for yarn bobbins, warp beams etc. To avoid a damage of bobbins and warp beams it is equipped with a ball-shaped indentation body. the covered distance of the indentation ball is proportional to the winding hardness and its transmitted by means of a movement (r=55 mm), for bobbins with a diameter of more then 400mm a flat working face is recommended. Depending on the material to be tested. Hardness tester with an indentation ball of 2.5 Ø mm , 5 Ø mm or 10 Ø mm are available.

SUNRISE NILOMETER (DRAW FRAME TOP ROLLER LOAD GAUGE)

It helps decrease Sliver CV%, Strength CV% and count CV% besides improving appearance. It has become a bench mark for spinners aiming for better Uster values.

Top Roller End Load setting is of critical importance since drafting load vary due to reduced cots sizes, worn-out journals, end bushes, eccentric bottom rollers, worn out springs, variations in pneumatic line pressure, deterioration in pressure hose pipes due to its wear results in decrease of End Loads of Top Rollers. It is the comprehensive one catering to all above machines & end loads upto 100 kg can be measured independently. It is must for the spinning department. It can be used on above all machines simply by using appropriate end bushes & centre rod with rollers.

The main advantage of SUNRISE NILOMETER is one can CORRECT & EQUALISE end loads.

MICRONAIRE TESTER and its application details

- Measures the micronaire value.
- Micronaire describes both the maturity and fineness of cotton fiber.
- The cotton with right micronaire value gets the best price.
- Various models available to meet specific requirements
- Finds application in : - Textiles / Spinning / Ginning
- System available with computer interface for logging the micronaire value.
- Unit is also available with interface to transmit data to PC using wireless communication.
- Different options of in-built compressor, external compressor.
- Supplied with weighing scale with ISI mark.

Salient Features

- Uses state of the art pneumatic systems for measuring the micronaire value.

- Uses highly stable microprocessor circuit technology to overcome the traditional limitations of measuring micronaire mechanically.

- The system is calibrated according to ASTM standards.
- Its main features are:
  ◆ Digital display. ◆ Auto-eject facility. ◆ Internal auto–calibration facility. ◆ Auto-drain facility.

Technical Details

- Micronaire range – 2.4 to 6.5
- Sample Size – 9.97 to 10.03 grams.
- Duration of measurement – 25 seconds for 2 repetitions per sample.
- Power - 230 VAC
- Frequency – 50 Hz
- Consumption – 250 Watts
- Air pressure – 4-6 bar (60 to 90 PSI)
- Weigh Scale – 0-100 grams, 0.01 grams resolution, ISI certified.

WRAP REEL (MOTORISED)

Technical Specifications

Swift Parameter : Metric 1 Meter, Imperial 1.5 yard

Swift made of : Hard Chrome Plated Steel

No. of Leas made at a time : 10

Spread of each Lea : 20 mm

Speed of Traverse : One traverse in 16 turns

Swift Brake : Electromagnetic Brake

Pre-set Counter : Digital

Operating Speed : 60 RPM

Motor : 1/8 HP 220 Volt Single Phase AC

Yarn Guide : Chrome Plated, Pig Tail Type

Maximum diameter of package : 100 mm or as per customer requirement

Maximum length of yarn package : 250

Package base plate : Metallic with powder coated paint.

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Textechno Herbert Stein GmbH & Co. KG

Statimat DS

Automatic Tensile, Evenness and Count Tester

Tasks of the quality control on yarns and threads

In the production of staple fibre- or filament yarns as well as in twisting or texturizing operations quality control serves to secure material properties which ensure trouble-free downstream processing as well as flawless final products. On the other hand, by routine testing of yarns it is possible to recognize faults in the production process early enough to analyze the causes of such defects and to take corrective actions.

The most important properties of yarns are tensile strength and elongation, mass unevenness, and yarn count (linear density). Static tensile tests, yarn evenness tests, as well as various methods of yarn count testing, e.g. by means of wrap reel and balance, serve for the assessment of these yarn properties. The operation of different test equipment to which the yarn samples are presented one after another, results in high expenditure of labour and, especially in case of modern automatic computer-controlled testing equipment, in considerable financial investment.

STATIMAT DS

This new model of the well-proven STATIMAT series of Textechno combines testing of tensile properties according to the CRE principle, unevenness, and count of yarn and thread in one tester. The essential advantage of such a combination of different test methods lies in the common use of peripheral components like package changer, threading mechanism for inserting the yarn sample into the test sections, yarn feeding device, waste yarn disposal, instrument housing with protective front panel, as well as control electronics including the PC-based Textechno TESTCONTROL system. The three tests on each package presented by the package changer are performed in succession.

SCIENCE IN INDUSTRY

Test methods

Tensile test

The essential features of this STATIMAT DS test procedure are the high clamping force of the pneumatic jaws for tensile tests up to 1000 N, the long path of the draw-off clamp for breaking extensions up to 1000 %, the quick yarn threading reducing idle time between successive tests to only a few seconds, the force-measuring system within the force range of 1000 N (1500 N on request), as well as high variability of the test process and the evaluation of the measured data. In addition to the static tensile test, for instance according to ISO 2062 or ASTM D2256, D885, alternating load tests (hysteresis tests) are possible according to freely selectable programs, as well as creep and relaxation tests.

A yarn feeding device enables high-speed take-off of selected yarn lengths prior to starting the test on a new package or between successive tests on the same package. This means that tests can be carried out on yarn lengths both from the package outer and inner layers.

Beside the standard automatic yarn clamps, various special clamps for manual introduction of the test sample are available. These enable tensile- and elasticity tests on fabrics and cohesion tests on slivers or rovings.

Yarn evenness test

A new innovative capacitor system enables capacitive testing of the mass unevenness according to ISO 16549 within a wide yarn count range by individual adaptation of the measuring sensor to the properties of the yarn material. As a new feature in yarn evenness testing the yarn tension can be monitored in order to ensure proper testing conditions. Measurable variables delivered by the system are the coefficient of variation of the mass distribution along the yarn length, the spectrogram, and for staple fibre spun yarns the numbers of neps, thick and thin places.

Yarn count test

In this test, e.g. according to ISO 2060 or ASTM D6587, a preselected yarn length, e.g. 100 m, is delivered by the yarn feeding device into a collection chamber, and subsequently the weight is measured. By using the principle of a vacuum conveyer the yarn is permanently in contact with the ambient (laboratory) climate. In this way drying of the yarn as would occur with a compressed-air system does not happen.

Another advantage is the yarn tension measurement during the test. If tension limits specified by the relevant standards are exceeded, a correction is automatically made based on the same yarn's tensile properties.

Technical data

Tensile test :

– 2 pneumatic yarn clamps, automatic threading by rotating gripper arm, min. gauge length 80 mm, max. travel of draw-off clamp 1000 mm for 100 mm gauge length, draw-off speed 1...10.000 mm/min;

– Force-measuring device with easily exchangeable force transducers, max. 1000 N; (1500 N on request);
– Elongation-measuring device with resolver, resolution 2 µm.

Yarn evenness test :
– Capacitive measuring system, yarn count measuring range 5...150 tex, max. test speed 500 m/min with yarn feeding device;
– Optical sensor for interlace tests in multifilament yarns.

Yarn count test :
– Yarn collection chamber and electronic balance, weighing range 300 g, resolution 1 mg (higher resolution on request), yarn length selectable in the range 1...1000 m, max. test speed 500 m/min with yarn feeding device.

Package changer :
– Standard version with 24 positions (expandable on request), free selection of package changer positions to be tested in succession.

Yarn feeding device :
– Casablanca system with nip roller/apron, max. yarn delivery speed 500 m/min, resolution of length measurement 0.3 mm.

TESTCONTROL :
– PC system for control of the test processes and for evaluation of the measured data, connection via USB interface;
– Textechno software as a WINDOWS application, input of all parameters for testing and measured data evaluation, saving of selected parameter sets under code words;
– Easy integration into any network type.

Further technical data

Mains supply	: 230 V, 50 (60) Hz, current requirement approx. 1 A
Compressed-air supply	: 6 bar, 60 l/min (with yarn feeding device/ AUTOCOUNT: 150 l/ min)
Lacquer finish	: RAL 9006/5002
Dimensions, weight	: Height 1680 mm, width 825 mm, depth 830 mm, approx. 250 kg

The above technical contents can be subject to changes by Textechno.

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Skaat Machine Works India Pvt. Ltd.

Thriving for innovations

SOFT CORE SPUN YARN SYSTEM :

Core-spun yarns are two or threecomponent structure with single or double core and sheath. Generally continuous filament yarn is used as core and the staple fibres used for sheath covering. The core-spun yarn is mainly meant to enhance functional properties of the fabrics such as stretch, comfort, strength, durability, dimensional stability and shape retention.

SKAAT provides all the three following core spun yarn systems :
- Soft Core spun yarn system
- Rigid Core spun yarn system
- Twin Core spun yarn system

It is a two component system with one component being soft core filament (elastic in nature) like elastane (lycra) and other one is for sheath like cotton or viscose staple fibres.

As the primary purpose of this system is to impart elasticity into the yarn, this system feeds elastane (lycra) filament into core of the yarn and cotton or viscose staple fibres are used as sheath to provide wear and comfort properties.

SKAAT supplies all the necessary creel modification accessories like one set of positively driven creel feed rollers for feeding lycra filament in controlled tension rate, stop motion for the lycra filament to prevent lycra missing and necessary guides in the drafting unit to guide the filament into core of the yarn.

RIGID CORE SPUN YARN SYSTEM

It is a two component system with one component being rigid core filament and other one is for sheath like cotton or synthetic staple fibres. As the primary purpose of this system is to enhance the strength of the yarn, this system has polyester filament in the core and cotton or polyester staple fibres for the sheath.

For example, poly core spun yarn has polyester filament in the core and cotton fibres cover over the surface of the polyester filament. In case of poly-poly- core spun yarn, it has polyester filament in the

core and polyester staple fibres are wrapped over the filament.

As the polyester filament being core component, strength of the yarn is tremendously increased and hence these yarns can be used for sewing threads.

SKAAT supplies all the necessary creel modification accessories to accommodate the bobbins of core filament, stop motion for the filament and necessary guides in the drafting unit to guide the filament into centre of the yarn.

TWIN CORE SPUN YARN SYSTEM

It is a three component yarn system with two components being core filaments and other one is of staple fibres forming sheath. As the primary purpose of this system is to provide elasticity as well as elastic recovery property simultaneously. Single soft core system provides only elastic property only.

In this twin core spun yarn system, two cores are being used, one for elasticity and another one for elastic recovery. And for sheath, either natural staple fibres and synthetic stable fibres are used depending on the application.

For core components, both normal lycra filament and special lycra filament, known as T400, are used to get the required property of high stretch as well as good fibre elastic recovery. As we know that normal lycra provides a good amount of stretch but won't recovery beyond certain elastic limit.

But a specially made T400 lycra filament provides a good amount of elastic recovery to the yarn. When both the normal and T400 lycra filaments are used for core, a unique yarn property is achieved in both elasticity and elastic recovery.

Thus these yarns can be applied in woven structures to provide better dimensional stability. Especially, when shape retention is needed for the slim and fit garment like denim, dual twin core spun yarns is the solution.

SKAAT KEY FEATURES

FEATURES :

- Supervision of each filament by means of sensor control
- Lamp indication for missing of filament and roving
- Perfect and Precision insertion system always maintain the elastane fibre inside the yarn
- "Roving Stop motion" stops automatically the fibre flow in each spindle when a filament break detected.
- Touch screen interface allow to modify, regulate and store the variable data required for core yarn preparation.
- As core material draft is controlled by servo motor, Ring frame can be running with variable speed which results uniform core material in yarn.

Comparative Features of all three Core Spun Yarn Systems

Particulars	Soft Core Spun	Rigid Core Spun	Twin Core Spun
No. of yarn components	2	2	3
No. of core material (name of fibres mostly used	1 Filament (lycra)	1 Filament (polyester)	2 Filaments (normal lycra+special T400 lycra) (lycra + polyester)
No. of sheath material	1 natural staple fibre (cotton fibre) or 1 synthetic staple fibre (viscose)	1 natural Staple fibre (cotton fibre) or 1 synthetic staple fibre (polyester stable fibre)	1 natural staple fibre (cotton fibre) or 1 synthetic staple fibre (polyester staple fibre)
Yarn Characteristics achieved	Elasticity	Strength and durability	Elasticity, recovery, shape retention and dimensional stability
Type of yarn (for example) produced in the system	Lycra Elastic yarn	Poly core yarn Poly poly core yarn	Lycra elastic recovery yarn
Applications	Knit inner garments	Sewing thread	Slim and fit denims, shape retention garments, high elastic with good dimensional stability woven garments

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INDEX TO ADVERTISERS

MARCH 2021

YARN SPLICE TESTER
(PORTABLE)

ANALOG MODEL
RANGE
500, 1000
& 2000 GMS.

DIGITAL MODEL
RANGE UP TO
2000 GMS.
LEAST COUNT 1 GM.

DIGITAL YARN TENSION METER

RANGE
UP TO
1000 GMS

DIGITAL MOISTURE METER

RANGE UP TO 50%
(For Cone, Loose Cotton, Bale)

PACKAGE HARDNESS TESTER

(For Cone, Warp Beams, Bobbin)

DIGITAL STROBOSCOPE

LED
FLASH
TYPE

(For Spindle RPM Measurement)

MANOMETER

FOR RING FRAME

PASCAL METER

FOR CARD M/C

DIGITAL MANOMETER
For Ring Frame & Card M/c.

SHORE HARDNESS TESTER
(For Rubber Cots)

ANALOG MODEL

DIGITAL MODEL

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