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Mohtasham Carpet pioneers new ZIMMER AUSTRIA tech in Iran

By Tansy Fall (WTiN)

Following a project initiated by ZIMMER AUSTRIA, last year, for digital printing on polyester woven, Iranian carpet manufacturer Mohtasham Carpet has been the first to install this pioneering production line. The modified COLARIS solution from Zimmer Austria is complete with a unique penetration booster system that ensures ink saturation on woven white PET carpet, pushing the ink into the carpet fibres before drying, heat fixation, washing and drying. The saturation of the print is crucial as it mimics the look of a venerated handmade carpet.

Penetration of the fibres is crucial, particularly for the Iranian market. Hossein Rahimi, managing director, Mohtasham Carpet (with translation by Saeid Haghighi, director, Kimc consultancy) explains: "Iran has the biggest tradition in carpets. The Iranian people are very picky when it comes to penetration and the backside of the carpet, and often people buy the carpet from the backside."



The carpet industry

Iran's prolific carpet making history has been characterised, largely, by its feats in producing hand-woven carpets, which have held international acclaim. Whilst the domestic market is strong, the popularity of these carpets has resulted in a thriving export market. Prior to sanctions placed on Iran by the Obama administration in the US, Iran's exports of hand-woven carpets amounted to around a third of the world's market. With the sanctions being lifted in January 2016, Iran's carpet exports have significantly increased again and thanks to the desirability of hand-woven carpets, more affordable machine-woven alternatives are also on the up.

According to Iranian daily newspaper the Financial Tribune, around US\$74m worth of machine-woven carpets were exported from Iran to Central Asia, Europe, Australia and neighbouring countries, such as Iraq and Afghanistan, during just three months of 2017 (March 21-June 22).

As well as the global provenance of Iran's woven carpets, when compared to tufted carpets, the woven alternative is highly regarded. Thomas Kloebl, sales manager, ZIMMER AUSTRIA, explains: "A woven carpet has a lot of advantages compared to a tufted carpet. It is more stable, with only a minimal latex finish on the back." With a tufted carpet, the pile is stitched into a pre-



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woven backing and then a secondary backing is adhered to this.



Mohtasham Carpet

Mohtasham Carpet has a rich history in the carpet manufacturing sector. Established in 1375, the company now has an annual production capacity of 1,869,000 sqm and employs just shy of 300 members of staff. It's manufacturing footprint amounts to 47,300 sqm and the company has invested in carpet production machinery from loop machines, to shaggy machines, and weaving machines with up to 1200 reeds for production of high-quality end products. The company also employs a team of inhouse designers for products that are intended for the end user market.

Mohtasham Carpet's most recent investment in ZIMMER AUSTRIA's COLARIS solution for printing on woven polyester carpets is to be an added value proposition for the company in a market which Rahimi says has been "controlled by new technology."

This is a bold move by Mohtasham Carpet as Rahimi says that Iran's carpet sector has not favoured synthetic fibres, and so carpet production hasn't really incorporated polypropylene fibres or polyester yarn.

However, he adds that "the thought was to create a carpet that was easy to recycle where the weft yarn and the pile yarns are the same polyester material." In addition, Mohtasham Carpet were looking for a simpler way to produce the carpet and the digital printing of any design on the carpet affords flexibility.

"For carpets, always your hand is closed," Rahimi says, "because of the colour limitations. For a machine-made woven carpet, you can only use 10 colours. To make a new colour, you have to weave two together." This has limited the industry in the creation of photorealistic images on carpets, with Rahimi giving the example of a blue sky, which requires tonal gradation.

Rahimi adds: "I think the Zimmer technology can bring all companies forward in the market. Printing is a revolution for carpet technology. Before, we lost a lot of market because of colour limitations, which meant we could not meet the desires of our customers."

In order to house its new printing line, Mohtasham Carpet has erected a new 3500sqm building. A further 11,000 sqm of its facility have been allocated for finishing and packaging of the carpets. The company is currently exporting US\$10million worth of carpets per year to key markets that include Australia, Europe and South Africa. Australia's market is particularly strong due to the demographics in the country, Rahimi says. Mohtasham Carpet is also set to establish warehouses in these key markets to service its customers regions more efficiently. A warehouse is currently being prepared in Germany.



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In addition to the export market, Rahimi says that for the domestic Iranian market this technology could also be of interest in order to more quickly update home furnishings. Following the adoption of the fast-fashion trend for home furnishings, Rahimi says that Iranian customers are "demanding change faster than they have in the past." In the domestic market, Rahimi adds Mohtasham Carpet is predominantly providing carpets directly to the end user.

Furthermore, the ZIMMER AUSTRIA COLARIS technology is enabling Mohtasham Carpet to provide this service on-demand. Rahimi comments: "With this technology we can accept an order for one carpet. And, we can save money. When we have an order from another country, they might come with a different colour of yarn [from what we have]. If we do this order for a small quantity, we have to order the specific yarn, change the creel of the machine, and we likely waste some of the yarn as well." With the digital printing technology, the company can now efficiently and cost-effectively fulfil any order for a woven polyester carpet. Rahimi adds: "This is new level for carpets."

And, the machine is capable of supporting other fibres as well, including cotton, viscose and wool. Kloebl explains that whilst the layout of the machine would need to be different, to facilitate the different ink types being used, the same machine could easily be used for different fibre types.



The set up

Though in many countries the lack of qualified staff for operating digital textile printing machinery has been commented upon by the industry, in Iran Rahimi says this is not an issue. "We have so many students that have just finished university [having studied] polymers, colour chemistry, electronics, we don't have a problem supporting the ZIMMER AUSTRIA machine in Iran. We have some technical staff now in the factory that are working on the machine and we bring new staff, trained by ZIMMER AUSTRIA, to work the machine."

ZIMMER AUSTRIA has provided Mohtasham Carpet staff with two weeks of on site training to operate the carpet printing line. Rahimi adds: "Success of this technology depends on us and ZIMMER AUSTRIA and how we enter the market. We think it can be a revolution in the future of the woven carpet but it's hard to tell what will happen. However, the ability of the ZIMMER AUSTRIA machine can definitely support the older machines in the factory."

To provision the investment in this new technology, Rahimi has also invested around US\$500,000 in television commercial advertising in Iran. He says this has so far received a good response and with a number of enquiries about production and a timeline for operation.



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ZIMMER AUSTRIA's Kloebl adds: "We are very confident that the product will come out very nicely. You have a learning phase and then acceptance from the market. This is not always easy [due to competitiveness] but it will help this market and make it a little faster."

Investment in this new technology could also open up a new market for Mohtasham Carpet. The hospitality sector, which uses contract carpeting, for example, often sees "architects put in woven carpet due to its longevity," Kloebl explains. "A printed, customised logo can now be applied to these carpets."