



Onwards and upwards

Imal-Pal was the next stop for our Focus on Italy trip, with the company having just celebrated its 45th anniversary. Stephen Powney reports

There's rarely a quiet moment at the head office of Imal-Pal in Modena, which is understandable for a company which supplies such a vast range of machinery and engineering for wood based panel plants.

The group, which comprises Imal, Pal and Globus, has now grown to over 350 employees, working at five facilities in Italy, and has a sales turnover forecast for 2015 of around €120m.

As well as being a busy Ligna year for the group, 2015 has also marked its 45th anniversary, which provided an interesting moment and perhaps an insight into the ethos of the company.

Unbeknown to the company directors, staff took it on themselves to design an advert for daily newspaper *Il Resto del Carlino* to mark the 45th anniversary, listing all the employees' names and including a thank you to the company for its commitment and dedication to building up Imal-Pal into a highly-regarded business across the world.

This unusual move delighted the owners and the advert has been framed in the boardroom.

Loris Zanasi, group ceo, returned from the Ligna show in Hannover in confident mood.

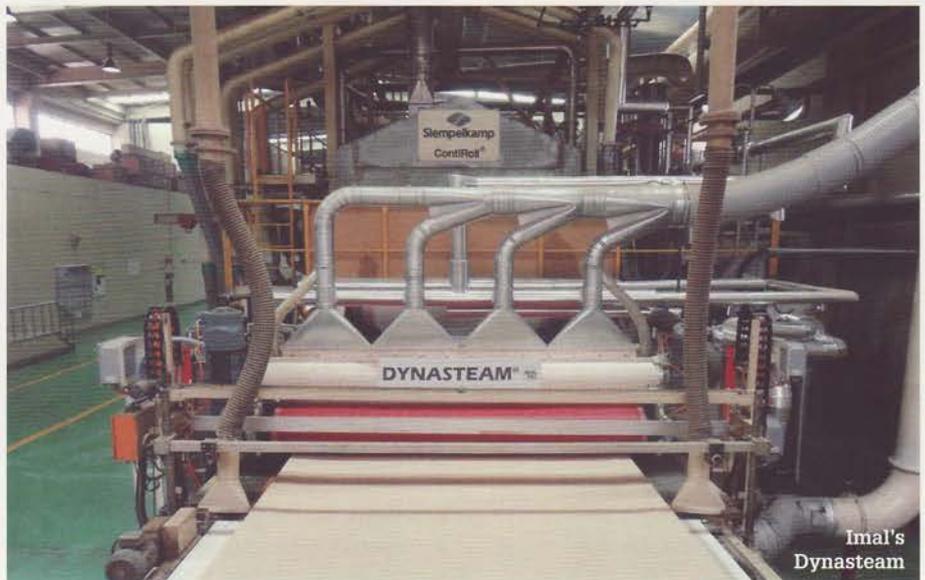
"Ligna was very successful and we got many contracts – about 10 deals in total, worth €5m," he said.

This includes particleboard and MDF resination technology orders and several Dynasteam systems (for dry steam pre-heating of the fibre mat before the press). Imal has now supplied about 70 Dynasteam units in total.

Imal says the Dynasteam technology is designed to quicken curing times, increase production capacity by between 15 to 30%, reduce panel over-thickness, contribute to a better surface density and lower press belt power absorption, all without causing any condensation which could discolour the board surface.

"This year our budget is full and we have a number of orders for 2016," said Mr Zanasi.

One of its recent projects was a full turnkey MDF plant contract in Vietnam for



VRG (Vietnam Rubber Group) Quang-Tri, with a 150,000m³/year capacity.

This involved the supply of all machinery, including a log yard from Globus, while Pal supplied a rotary debarker, Dynascreen, Dry Cleaner for Chips (DCC), chip silos and fibre former.

Imal supplied its continuous press, with Dynasteam pre-heating, as well as a Hi-Jet Blowline Resination System, laboratory equipment and automatic storage, while also co-ordinating the supply of Andritz refining and Steinemann sanding machines.

"We have big business in the pipeline," said Mr Zanasi, confidently.

This includes a pallet block plant currently being assembled in the workshops for a project in Poland.

The company is also having some success with wood pellet plant technology; it is currently in negotiations on a couple of large projects in South East Asia and North America regarding large capacity – 12 tonnes per hour – pellet presses.

"There is an increase in business in North America, it's a market which is growing. In the past we sold a lot there, but of course sales had been down in North America for a number of years," pointed out Mr Zanasi.

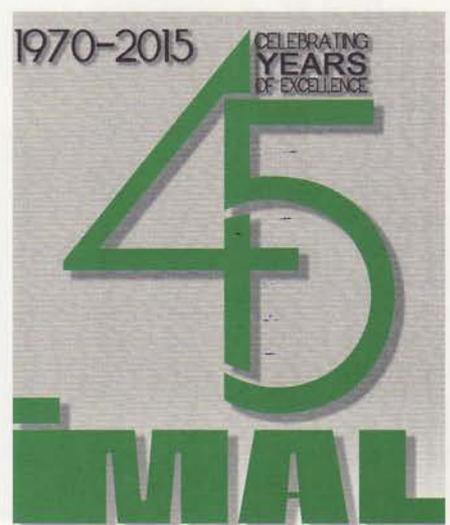
Quality Control

"We have been very successful in online quality control equipment," said the chief

Imal staff took out this ad in an Italian daily newspaper to celebrate the company's 45th anniversary



The new PL100 laboratory press





executive. "We sold a number of these at Ligna."

This includes the Online Density Profile Meter, CDP700, which uses x-ray technology installed beneath the line. The unit has been designed to perform the on-the-line density profile analysis on wood based panels while the production process is in progress. The system exploits the theory adopted in X-ray operated systems to conduct a non-destructive test on the board produced.

Its quoted benefits include accurate

board density profile analysis, graphic illustration of the density profile, 2-D and 3-D visualisation, quick comparison of test results with other laboratory equipment and ease of maintenance without interrupting production.

Imal also says production may be changed without the need to change any of the machine parameters and automatic calibration. Reducing start-up times and optimisation of material used are other stated benefits.

Another type of quality control equipment shown at Ligna was the Full Blister Classifier (FBC) 100. The FBC100 has been designed to detect unglued, delaminated, blown or low density areas, bubbles, cracks and other flaws inside any type of board (particleboard, MDF or OSB). Imal said that, unlike earlier systems (which had a limited number of measuring channels and as a result were only able to guarantee a maximum board coverage of 30%), this system is able to detect defects across the

Resination the Imal way

The HPRS (High Pressure Resination System) is a 36-month project, co-funded by the LIFE+ programme, which is an instrument supporting environmental protection.

A consortium of four partners, coordinated by Imal, has designed a new resin distribution system for application in the production of engineered wood panels. This system, the HPRS system, has been set up and tested on an existing panel production line at the Xilopan facility in Cigognola (PV), Italy.

Resin consumption has undergone close examination over the last few years, mainly due to cost and to the fact that resin contains formaldehyde, a toxic substance. Hence the need has arisen in the production of wood based panels (MDF, particleboard and OSB) to cut production costs and, at the same time, to move towards environmental sustainability.

Taking, by way of example, an MDF plant with a daily production of 1000m³ of board and an annual resin consumption of 32,000 tonnes (equivalent in Europe to an average cost of approximately 11-12 million euro), reducing resin consumption by 8% means saving €1,000,000/year, in addition to a consequent drop in the amount of formaldehyde present in the board – and released into the environment as a VOC (Volatile Organic Compound).

The drawbacks of the various atomisation technologies available today, where compressed air or steam is used to impel the resin and increase the surface over which the resin comes into contact with the fibre include the high temperature, which impacts on resin properties, poor control management, and the fact that they cannot be employed on particleboard or OSB lines because of the rise in moisture content.

In the case of MDF production, additional steam injected at the blowline can affect refiner performance, leading to higher energy costs due to greater steam requirements.



The innovative technology applied in the HPRS, where pressures can exceed 100bar, employs a unique and revolutionary variable aperture nozzle to achieve optimal resin distribution while maintaining the same, or even better, board properties and quality. It can also reduce resin addition and energy requirements by over 20%.

The resin is distributed through these nozzles at a constant pressure and with the right 'drop' size, despite variations in flow rate or changes in production thickness, to achieve a perfect nebulisation.

Another advantage of the HPRS system, says Imal, especially for MDF plants, is that the steam is not mixed with the resin but is injected into the blowline through separate nozzles – suitably mounted with respect to the resin nozzles – in a small, controlled, quantity.

This allows the fibre/steam flow to travel inside the piping to the dryer at a suitable speed – and rapidly enough to facilitate the blending of the resin with the fibre.

To date, 78 HPRS systems have been installed worldwide, approximately 40 of which are installed on MDF lines and the others on particleboard and OSB lines, achieving significant results in both economic terms and environmental impact, says Imal.

A Hi-Jet resination system installed in an MDF line



Imal sold several resination systems at this year's Ligna. This one is for particleboard



Another Hi-Jet blowline for MDF



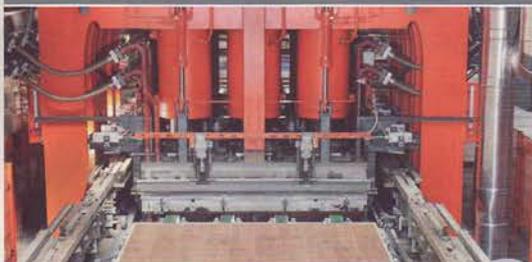
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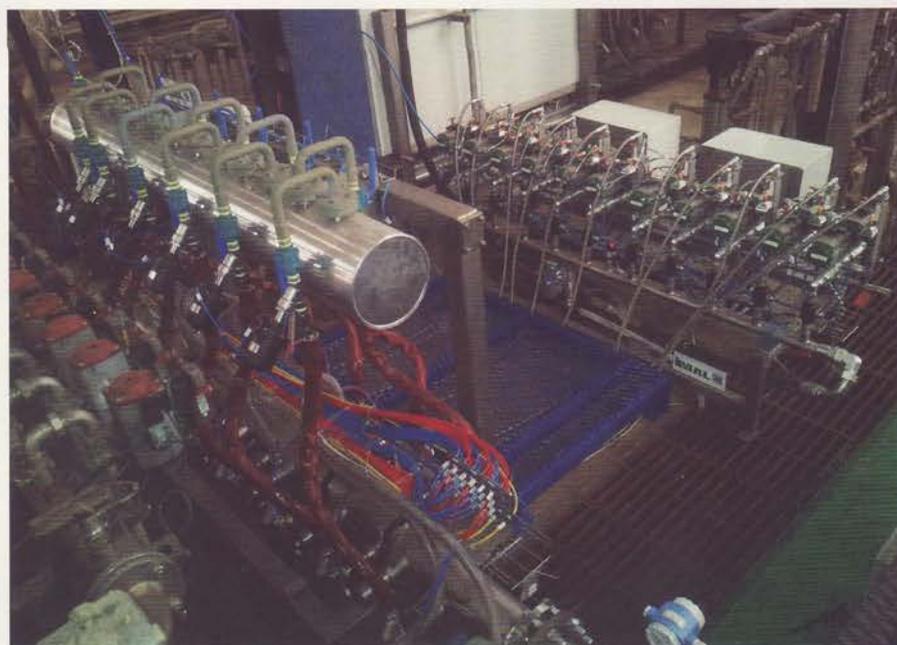


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Hi-Jet resination system for MDF in situ in a production line

whole board. It is possible to grade the quality of the production in progress and to adjust the product parameters in order to avoid rejects. The FBC measuring sensors are mounted on the top and bottom beams on the board outfeed side. Since the sensors do not come into direct contact with the board, typical problems related to material wear are eliminated.

Laboratory equipment

Imal is known for its extensive range of laboratory equipment and this year it has been presenting, for the first time, its PL100 laboratory press, featuring full electronic control of the press cycle and temperature.

This addition effectively completes the full range of laboratory equipment available from the company, said Mr Zanasi.

The PL100 is able to produce raw or laminated sample boards for testing purposes, with adjustable specific pressure and adjustable temperature for binder curing. The laboratory press is complete with its own electronic and software control, with thickness and pressure transducers.

The data regarding the cycle required is stored in its pre-programmed memory.

The system controls the various phases of the cycle, following a logic sequence, and switches over from one phase to the next as soon as a specific condition is fulfilled.

The parameters available to the operator are thickness, time and pressure. The memory is able to store a large number of cycles, in addition to storing the parameters relating to each cycle. The system directly controls the hydraulic valves to obtain the desired cycle.

Other laboratory equipment available

includes a formaldehyde tester, Optical Lab Fibre Screen – Fibercam 100 – which is designed to give an accurate measurement of fibre dimensions, even in cases where fibres are laid over each other.

There is also the firm's Glue Mix Gel Time Control – 'Gel Timer' – designed to measure the gel time of the resin delivered by the supplier and the gel time of the glue mix applied in the blender and the blowline.

Meanwhile, Imal has so far sold about 270 Board Property Tester and Density Profile Analysers – IBX700 – designed to test the quality and mechanical characteristics of wood based panels (particleboard, MDF, OSB) in compliance with today's standards (European, North American, and others upon request) and to then process the results obtained.

Standards tested to include dimensions (EN 325), density (EN 323), tensile strength (EN319), surface soundness (EN311), screw holding (EN320), bending strength and modulus of elasticity (EN310).

Furthermore, the company is also telling customers they can outsource their full laboratory equipment requirements to Imal, which can provide a full turnkey laboratory, with all necessary equipment and even the layout to fit their factory plans.

"Based on our experience, it is better to build a lab as a one-stop shop, rather than taking a piecemeal approach," said Mr Zanasi.

This year's Ligna was the first time Imal had promoted this concept.

"We are a relatively small company in this industry but no-one in the world has such a wide range of products," concluded Mr Zanasi, proudly. ■