

Application Success Stories

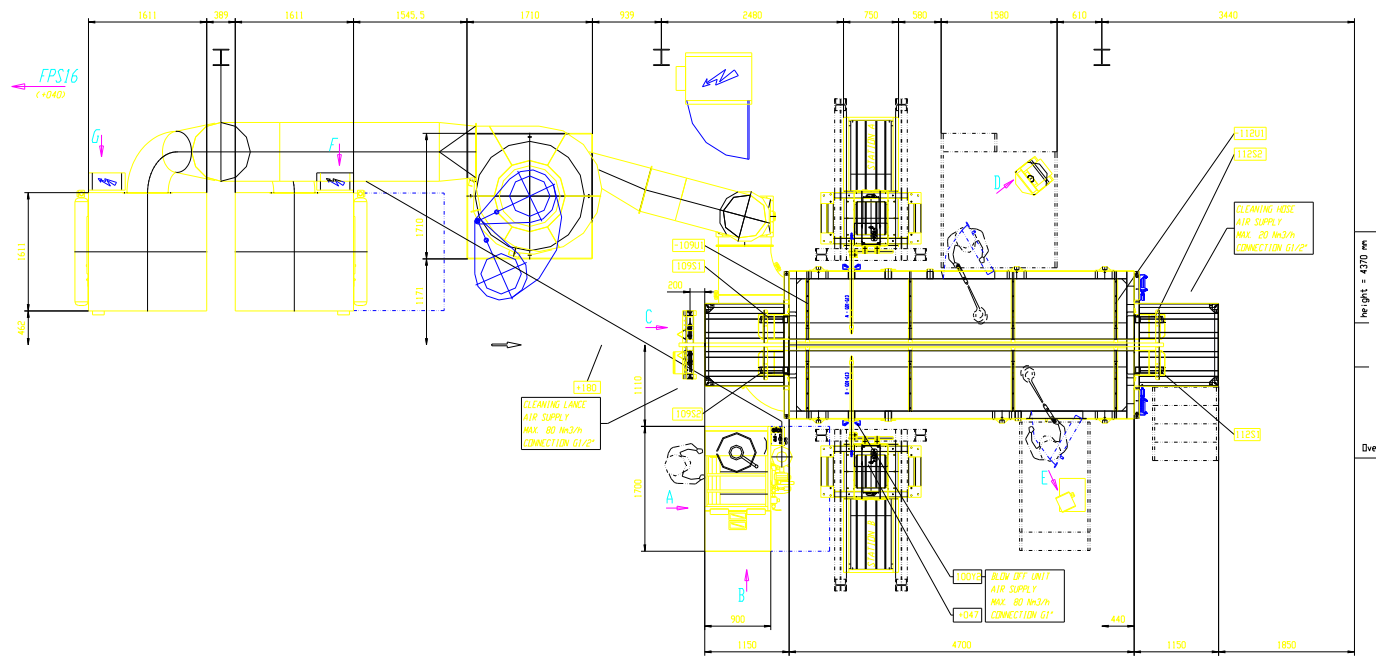
LEGIPOL Wałbrzych

More effective powder coating

Legipol Sp. z o.o. from Wałbrzych is an expert in manufacturing of complex fencing systems Legi®. LEGI system that was awarded many times is famous in Europe and throughout the world for simple and modern solutions guarantying high quality, durability and safety as well as visual effect desired by the clients. Great majority (over 90%) of fencing produced by Legipol is transferred abroad. A base of the development of the company strategy is quality policy. In relation to that Legipol constantly applies and improves the quality system compliant with PN-EN ISO 9001:2008 standard. A confirmation is a certificate concerning designing and manufacturing of fencing systems, hot-dip zinc coating and electrogalvanizing service as well as powder coating.

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Layout



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Installation Key Data

Parts: Mesh panels, Fences

Parts Size: 3000(L)x600(W)x2500(H)

Conveyor Speed: 1.6m/min

Scope of Delivery:

- Magic Compact BA02
- OptiFlex AS05-36G
- 2x ZA05-23/XT11-14 (hanging)
- CM30
- OC02 IN ICS03 INCL. LIGHT BARRIER
- FPS16

Replacement of powder coating system increased production capacity of fencing manufacturer

Increase in production volume by 100 % is not only a reason for every businessman to be happy but also some dilemma of how to adjust the machinery to higher efficiency. Very often paint shops are lagging behind increasing requirements. Fortunately, building of a completely new line is not always the only choice. Replacement of powder coating system may be a sufficient solution and this was the case in Legipol company.

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Spray booth is equipped with 36 automatic guns; they ensure ideal paint coverage of open-work elements.



Steering is executed directly from touch panel. In the photo: Adam Dobrowolski.



Dorota Opalinska next to control unit



Powder centre.

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Solutions that have been used so far are no longer efficient enough and the paint shop becomes a so called “bottleneck”. The company managers are faced with a decision of how to increase the efficiency of coating process in order to execute customers' orders and keep the production flow. Replacement of varnishing system (together with applications and powder management system) was a solution in Legipol company.

– Our two painting chambers that had been previously used were not sufficient enough – says Adam Dobrowolski, paint shop supervisor of Legipol company. – We were not able to execute orders. We needed a system which would improve work. We were especially interested in increasing efficiency not quality because the highest quality standards have long been met by our products. Therefore, we were thinking of a way to achieve this goal without the necessity to demolish our completely

automated layout of the paint shop. We especially wanted not four fence panels on one lifting beam, but six. Therefore, we thought about buying new powder coating system. After analysing several offers and visiting referential powder painting workshops, management of Legipol has decided to choose Gema Switzerland GmbH devices delivered by EKO-BHL Sp. z o.o. distributor. They equipped the powder painting workshop with new system of spraying MagicCompact powder paints with OptiCenter, which guarantees precise control of the process and high rate of powder recovery. Control unit is integrated with automated system of powder management. The main part of powder centre is OptiSpeeder II. It is a unique concept that prevents the loss of powder during the process of fluidization. The control of powder circulation is fully automated and very precise. OptiCenter is designed in very compact way.

Operator can control spraying the paint in a precise way. Steering is executed directly from touch panel. A comprehensive control system of MagicControl connects control technology with intuitive user interface. Each time there will be automatic adjustment of width and height of gun work using photocell. Thanks to this feature, reciprocator adjusts to a position suited to reading the element dimensions. In total, in Legipol powder paint shop there are 36 automated guns installed on two reciprocators. This amount in connection with specially designed lifting slings, on which there are 6 items of open-work fence grates at the same time, ensures ideal paint coverage and minimal loss of powder paint.

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MagicCompact EquiFlow booth allows fast change of colour. Automated cleaning program started during painting considerably reduces time needed for changing the colour. It is also due to the fact that there are only several kilograms of powder in use. The characteristic feature of the MagicCompact booth is sandwich-type

walls. Such solution as well as the material used for making the booth cause that minimum amount of paint accumulate on the walls.

Extremely homogeneous air stream inside the booth creates perfect conditions for excellent control of spraying process, resulting in ideal effect of coating. MagicCompact booth can be easily built in the existing installation thanks to its coherent construction, giving the example of powder painting workshop in Legipol. The whole line works with speed 1,6 metres per minute and the maximum length of elements is 15 metres.

– Conditions established for the supplier were realised during everyday work of the powder painting workshop, although it had to take some time to adapt all elements in such a way that we could get desired parameters. – summarises A. Dobrowolski – It required many-months tests, settings, services.

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However, we could count on help from EKO-BHL technologists, their experience, knowledge and commitment. Appliance of Gema company solutions allowed not only increasing productivity of painting process but it also contributed to putting the powder paint in more economical way, what was difficult to obtain on old line.

– Fully automated powder painting workshop works without any problems, thanks to that we can fulfil orders on time, offering products of high quality with visual effect desired by clients – adds Dorota Opalinska, powder painting workshop technologist.

It is worth mentioning that the process of preparation of the elements surface is not changed. The elements are earlier coated with zinc. Nowadays, we use two types

of zincing: hot-dip zinc coating, which provides the most effecting anti-corrosion protection and electrogalvanizing, which provides coat that is thinner (depending on client's demands). After the process of zinc coating, fencing elements are subjected to the next treatment – powder coating.

Fencings, because of their purpose and placing, are directly exposed to destructive impact of environmental conditions and using of duplex system guarantees long-lasting and effective protection even in extreme weather conditions. Such double inseparable layer allows protecting of the fences even for several decades.

Crosslinking process of powder paint in a bake oven using catalytic IR rays has not changed as well.

Such solution ensures optimal use of produced energy. The time for launching of bake oven is only 12 minutes and the time of polymerization is about 10-13 minutes depending on the type of paint.

Teknos paints used for varnishing are adjusted to the requirements of painting zinc coated elements and thanks to that, there is no problem with so called zinc gassing. There is high consumption of low temperature varnishes. Nowadays, the most popular colour is anthracite; however, there is a possibility of using all RAL colours to paint the fence.