

ATEX compliance – it’s not rocket science!

In a global print market that is becoming more competitive by the minute, compliance to internationally recognised standards that certify performance is no longer a requirement, it’s a necessity. Nick Coombes spoke with Anders Kongstad of Flexo Wash about the company’s experience in this field.



“We have been building machines that are ATEX compliant for more than 10 years, so we can comment from a position of authority,” said Anders Kongstad, Technical Director at the Danish manufacturer. To understand the background one has only to look at the meaning of ATEX – it’s an acronym for ‘ATmospheric EXplosion’ and a reminder of how potentially dangerous the solvents and flammable liquids that are used in the printing process can be. No wonder then that it has been the subject of an EU Directive (94/9-EC) since 1996.

Flexo Wash began by building the pneumatic style because they were simple ‘plug-in and play’ machines that required little maintenance and were easy to run. But a reliance on compressed air, which can be expensive or difficult to source in certain countries, combined with the lower washing pressure, means that for most converters the way forward is electric power. More complex and expensive, and with a requirement to cool the solvent in the tank that has been heated by the energy generated by the electricity, these machines do however run with a higher pressure wash cycle, and are consequently more effective.

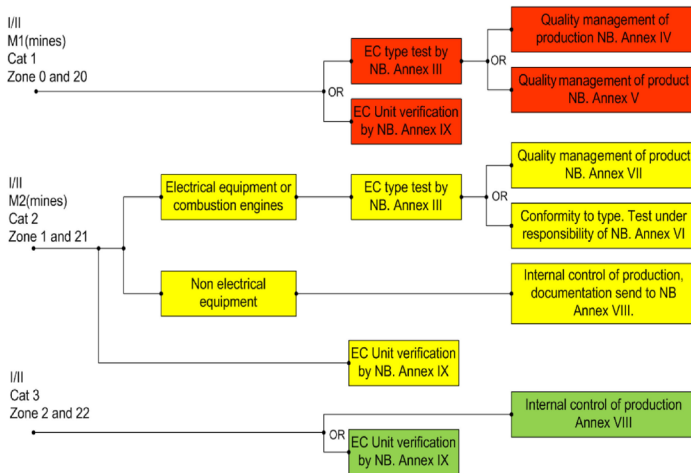


Fig 1: The EU ATEX directive distinguishes between electrical and non electrical systems

“Up to 2011 we manufactured only pneumatic machines and currently have more than 100 installed world-wide. Since then, we have installed a good number electric machines and will add substantially to that number in 2015,” said Kongstad. The extra power of the electrical system is particularly useful to gravure printers, where the parts require a more arduous cleaning process. It can also offer a short high-intensity wash programme with the PLC unit integrated with the ventilation system and the distiller. According to Flexo Wash, this carries a higher initial price tag, but the payback period is shorter too.

The switch over from pneumatic to electrical caused some confusion in the market about compliance. *"Pneumatic systems do not need to be certified by TÜV Nord, so people assumed they did not comply, but this was never the case as the directives distinguish between the electrical and non electrical systems. The two different types of system need to comply with different types of approvals. Flexo Wash has implemented an extensive quality management system to handle the requirements for building ATEX machines. All units have compliance via QC management and a QC system that is audited each year,"* he explained, adding that in any 12-month period there are usually five or six updates to the applicable standards, *"which is a bit like trying to hit a moving target,"* he quipped! In 2014 a draft of new ATEX Directives was issued, which require compliance by April 2016, though Kongstad says these relate less to the manufacturers within the EU, and more to those selling in.

So, what constitutes an ATEX compliant room? It is all about risk control and safety. The room generally comprises a washing machine, distiller, LEL control, light, house installations and a ventilation system. Contrary to popular belief, it does not need to be fully enclosed on all four sides, as long as measures are in place to contain any potential explosive situation. All the equipment in the room has to be designed and suitable to be placed in the potentially hazardous environment, in order to

make the room safe. If this all sounds expensive, Kongstad estimates a complete ATEX room, including machinery, could cost between 100,000 and 200,000 depending on the choice of the equipment, with installation costs varying according to location. With the reduction in waste and improvement in quality that a new installation brings, the payback period can be shortened.

Flexo Wash machines include cooling, which reduces evaporation and improves safety as well as cutting operating costs. The latest machines have intelligent ventilation systems, which combined with sealed washing machine tanks,

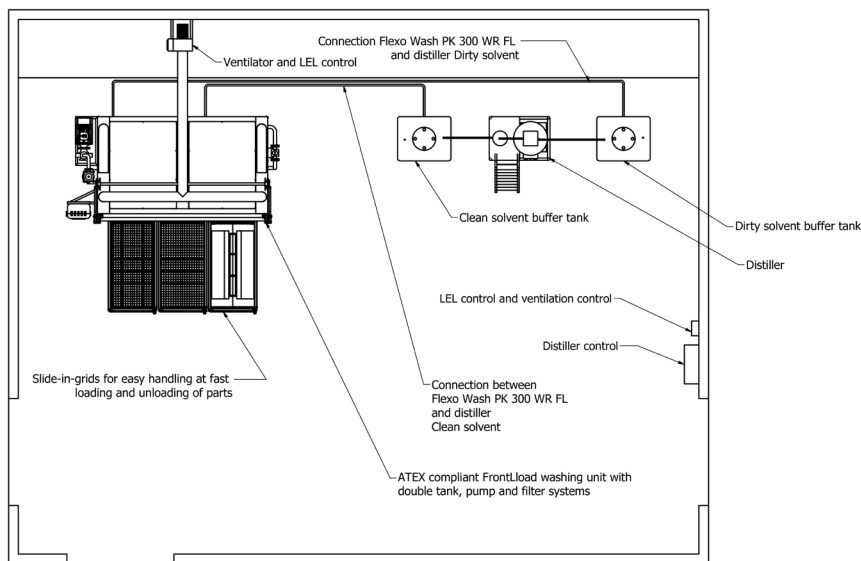


Figure 2: Washroom layout based on an ATEX model

lower the solvent consumption. At a typical cost of between € and 1.75/litre, this is money worth saving. Kongstad explained: *"By steadily improving the system, we have managed to reduce solvent loss during the wash cycle. In fact, one of our customers says that with the new equipment he has reduced consumption from 25 to 5 litres per washing cycle, and reckons his ROI will fall well within the first year after installation."* Another system, and unique to Flexo Wash is the use of two closed tanks – one for washing and the other for rinsing. The advantage is a lower requirement for distillation, which saves both energy and solvent – this is estimated to reduce costs by up to 10% per cycle.

"One of the most frequent problems we encounter in production areas is lack of space. Companies can have a blind spot when it comes to allocating space for anything other than printing – and of course, some just don't have much space to start with. That's why we have designed our equipment to have as small a footprint as possible. In some cases, this is up to 50% less than our competitors, and with floorspace costing money, it's an important calculation to make," he commented. It highlights how in today's highly competitive marketplace, where quality, price, and fast delivery are 'a given', an efficient production process is the only route to survival – and this requires a change of thought process and working practice for many converters.

If the need for ATEX compliance is growing, how is the move away from solvent-based products affecting the market? With pressure from several European countries (Germany, Austria, Switzerland, Denmark were cited as examples) to move towards solvent-free washing, how will manufacturers like Flexo Wash cope with the change? *"Solvent-free used to be less efficient and there are still issues with recycling, but these will largely be overcome in the next decade. The liquids are also more expensive, but there is hardly any evaporation, and these liquids have a longer life, so the consumption cost is similar, and the machinery is also cheaper to manufacture. Yes, some things will change, but slowly, and only in certain markets – we foresee there being a large number of solvent-based printers for years to come,"* commented Kongstad, who added that Flexo Wash will be installing several solvent-free washing systems for solvent based printers in 2015 as well.

Asked to summarise his company's approach, he said: *"At Flexo Wash, we aim to de-mystify ATEX compliance – it is not as complex and difficult as many would make out, and by working with qualified partners, converters can be assured of a system that meets current and will meet future legislative requirements. It's all about customer support."*