



## ISO 13849-1 in Action: Plastics Unlimited in Preston, Iowa

For most people, the coming of a new year means new resolutions. For many U.S. manufacturers, however, a new year often means new regulations – and this year has been no different. Perhaps one of this year's most talked-about new regulations is the Occupational Safety & Health Administration (OSHA's) adoption of the international ISO 13849-1 safety standard, which relates to machine guarding.

While there are many layers to this policy – running the gamut from OEMs to end users – U.S. manufacturers of all types will want to evaluate their safety apparatus this year. Although some situations will be fairly obvious to identify and address, others will not. As many safety consultants have noted, machine safety is going through a paradigm shift as old evaluation parameters such as SIL (safety integrity level) and Cat (Category) are phased out and new ones like SIL and PL (Performance Level) become the basis for machine guarding and hazard mitigation. The incorporation of these probabilistic, qualitative approaches with the previous deterministic, quantitative concepts will effectively force many small manufacturers to retrofit safety enclosures into workstations that didn't previously require them – even if no new production machinery is being added.



Plastics Unlimited

That precise scenario just unfolded at Plastics Unlimited in Preston, Iowa, which produces custom thermo-formed and urethane parts for original equipment manufacturers like John Deere and Bobcat. One of Plastics Unlimited's busiest workstations features Thermwood 5 Access CNC routers, which are used almost constantly through two shifts per day to trim thermoformed polyurethane parts (like door components) after they've been vacuum formed. Situated on two five-foot by five-foot tables, the routers are adjusted into position depending on the parts they are trimming and then programmed to cut robotically. Since routers of this type are not operated manually, they typically haven't required safety enclosures – until now. However, the new standard's broader hazard

evaluation/mitigation criteria means router stations like this now require custom-designed protective enclosures. In the case of Plastics Unlimited, there were operational as well as regulatory considerations to the retrofit; given the plant's floor space, the new safety enclosure couldn't impact adjacent space in the relatively small but extremely busy plant. Nor could the installation shut down operations for an extended period of time.

“Any unusual costs or down-time related to capital improvements can be problematic for small manufacturers, particularly in today’s economy,” said Plastics Unlimited President Terry Kieffer. “I was particularly worried about the router enclosure application because we couldn’t increase the footprint of the overall work station – so it required a custom design.”

Fortunately for Plastics Unlimited, the solution to this problem was relatively simple. Kieffer got in touch with Drew Beck, regional sales manager for Frommelt Safety Products for suggestions. After doing a site inspection, Beck suggested the enclosing the area with the eight-gauge steel wire Roboguard fencing, covered with Saf-T-Vu fabric which are specifically designed to contain application-related hazards including weld flash/sparks/smoke, mist, or flying debris. Access to the workspace would be provided through twin Slimline Automated Barrier Doors, which also protect plant personnel against application-related hazards. Slimline Doors were particularly well-suited for Plastics Unlimited workspace because they open by rolling up, rather than swinging outward. They also incorporate a large 80 mil PVC window, so employees can monitor the work area from outside.



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The installation of the doors and fencing went quickly and easily, only shutting down the router workspace area for parts of several days.

“We are very pleased with the way this turned out,” said Kieffer. “Although we’ve never had an accident in that router area, employee safety is very important to us. Additionally, the Slimline door looks very modern and professional and we appreciate the noise buffer the enclosure provides – two side benefits we didn’t anticipate.”

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Sources: AVAILABLE UPON REQUEST as needed, recommended or required.