Work preparation and workflow planning

A MACHINE that is not operating because it is waiting for material costs money, without producing anything to offset these costs. It is important to fabrication to constantly provide the machine with material to maximise its utilisation.

A processing machine is only part of the workflow, which is connected to a greater system of interdependent machines, components and processes. In order for a machine to operate at full capacity, the material has to be available, has to be transported to the machine, and has to be prepared appropriately at other machines, if necessary. These other machines also need to operate at the necessary efficiency to provide the following machines with material in the quantity and order it is needed. All of this requires production and workflow planning, determining which machine needs to process which material at any given time, in order to ensure smooth fabrication throughout the shop. 3R software's RONIIsoBuilder and RAMP applications are useful tools for optimising work preparation and workflow in the pipe shop.

RONIIsoBuilder is used to either directly create line drawings of the piping systems, or to import them from third-party CAD platforms. In contrast to standard isometric line drawings that can be generated with any drawing program, the isometric drawings in RONIIsoBuilder are connected to a material database that includes all fabrication-relevant information for every component in the system. This not only makes it easy to generate part lists and bills of materials, but can also be used to perform various initial checks, collision testing for bending pipes, and logic tests such as checking that the selected components fit together properly.

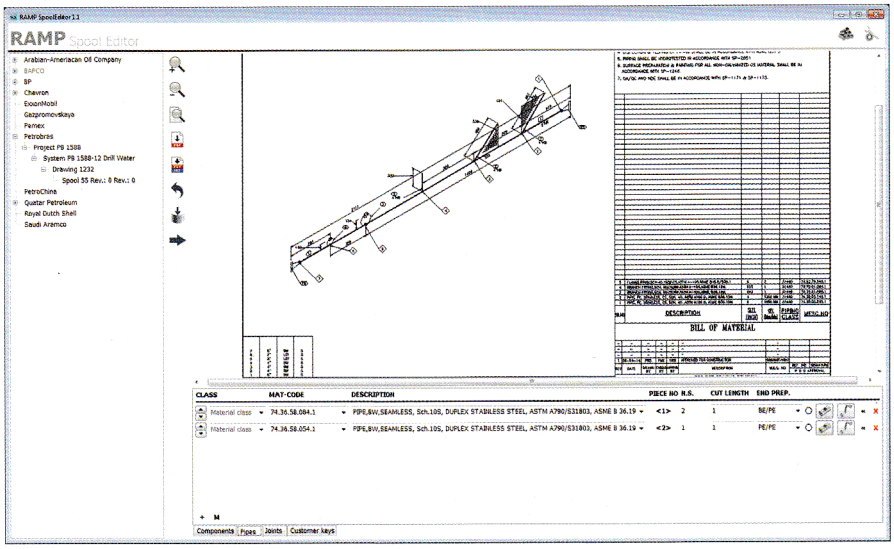
It is also possible to generate various production reports and documentation (bending lists, cutting lists and welding documentation), as well as work sheets with detailed fabrication data.

Once the spool data has been generated, it is transferred to the RAMP system for fabrication planning. Here, the operator can create a package of work orders for each day/shift. For each process required to finish the spool, a previously determined time is used to calculate the required fabrication or processing time at each machine. This way it is possible to balance the workflow between multiple machines, making sure no machine is idle while others are overworked. It also makes it possible to determine all required fittings and deliver them to the place where they are needed ahead of time.

The RAMP system will automatically try to minimise retooling at processing machines and optimise the cutting processes to reduce scrap.

By implementing RAMP sub-modules at the various processing stations it is possible to update the fabrication status of each spool at each station. This can be used to refine the processing time values used to calculate utilisation and fabrication time, and also allows up-to-date status reports and fabrication tracking.

RAMP spool editor



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