



METIX

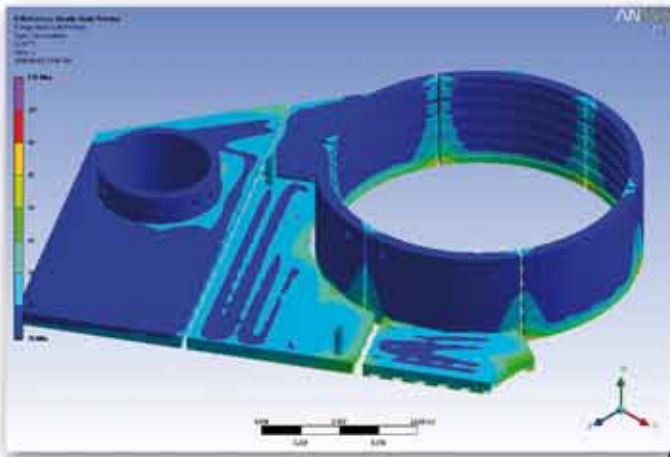
SMS group

FURNACE ROOF

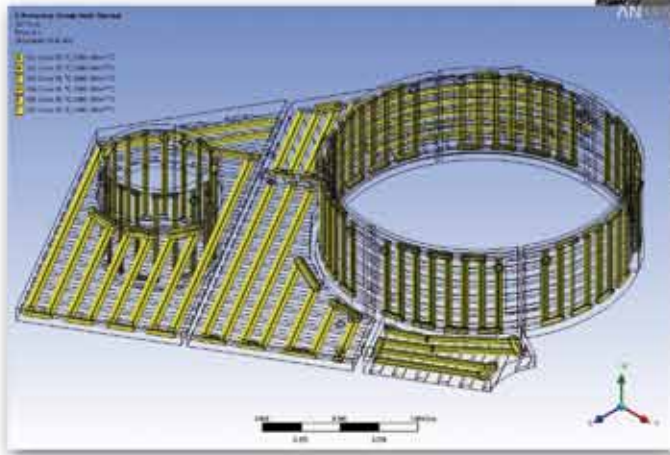
Metix furnace roofs are designed for reliability and durability, even when the smelting process is far from ideal. There are three basic roof designs available in the Metix range:

- At the top of the range is the forged solid copper closed furnace roof. This roof is able to operate under the worst of furnace conditions for unlimited periods of time even without any refractory.
- Second in the range is the steel and stainless steel fabricated water-cooled roof. With refractory this roof can withstand most furnace conditions successfully for fully closed and semi-closed furnaces.
- Third is a combination of water-cooled and forced air-cooled roof. With the combination of special refractory this roof type can be utilized successfully on semi closed furnaces where the availability of cooling water is limited.





Above: Forged copper roof FEA cooling analysis evaluating the positioning and quantity of the water passages.

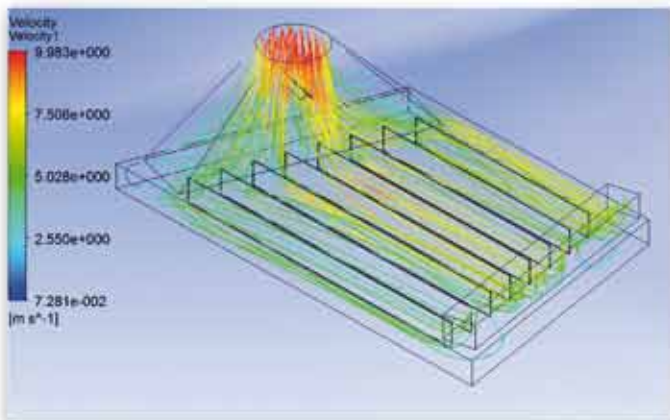


Above: Forged copper roof water passage design.

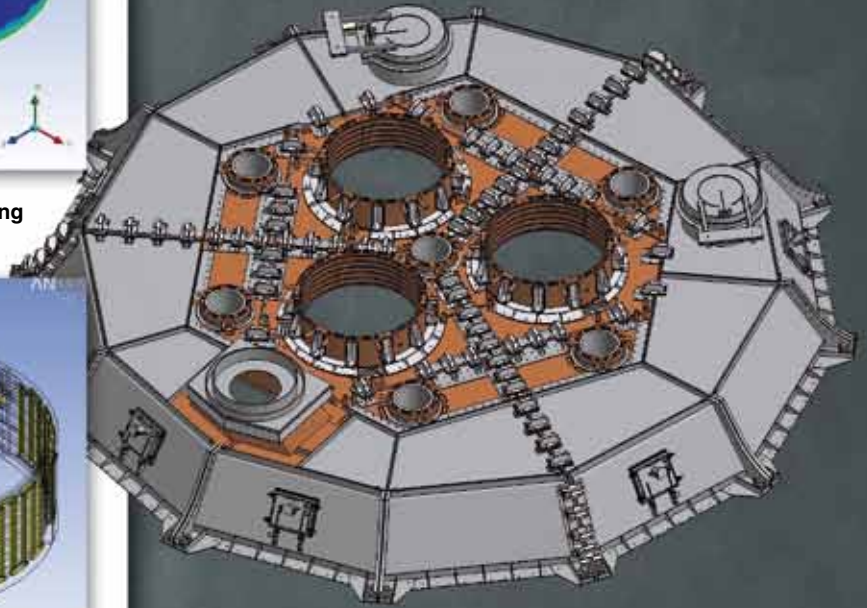
On fully closed furnaces the furnace roof plays a vital role in sealing the smelting process off from the atmosphere this reduces the combustion of CO gasses, reducing the amount of gas that needs to be processed in the gas cleaning systems, ultimately resulting in a higher CO gas quality and lower off-gas temperatures.

All Metix furnace roofs incorporate the highest possible level of electrical insulation with up to eight levels of insulation from electrode-to-electrode greatly reducing the possibility of arc damage and the associated downtime.

Below: Forced air cooled roof CFD analysis evaluating the airflow through the roof.



All Metix furnace roofs are meticulously designed using the latest in 3 CAD and FEA/CFD software. This ensures accurate detail drawings coupled with optimized engineered cooling.



Above: Basic 3D CAD drawing of a fully closed furnace roof.



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