

# DANIELI WATER COOLED ELEMENTS for steelmaking furnaces and equipment

**Danieli FastArc® Long-Life Energy-Saving Panels and water-cooled elements for EAFs and secondary metallurgy equipment** to compete with the market pricing and high quality standards established by our own manufacturing centers, and guaranteed with the fastest delivery times.

In order to reach the high quality standards now expected from steel manufacturers, Danieli is committed to achieving those standards, designing and manufacturing water-cooled panels and equipment at our own facilities.

Since the major causes of unscheduled downtimes in steel plant production are also water-cooled components failures, the plant's availability index is increased significantly when Danieli's high-efficiency and high-reliability water-cooled components are installed. This performance is reached by continuous quality monitoring of our standard manufacturing procedures and materials (boiler type / low-carbon steel tubes, copper tubes), assembling and welding procedures, and pre-delivery tests. All this, together with the 100% on-time delivery company policy.

## Water-cooled equipment and service life

- > Steel and copper panels
- > EAF shell sidewall panels
- > EAF/LF roof panels
- > VD/VOD water-cooled shield
- > Fume treatment plant water-cooled duct (primary water-cooling system).

Danieli water-cooled panels' lifetime average:

- > Standard EAF shell panels: 5,000 heats
- > Roof panels: 6,000 heats
- > Long-life energy saving panels: more than 10,000 heats

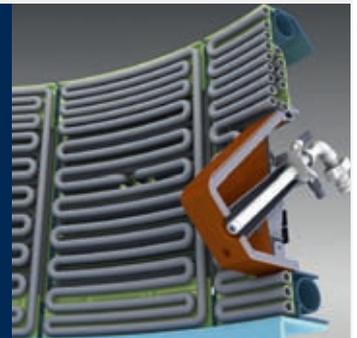
## Danieli Long-life energy saving panels advantages

- > EAF panel houses optimized to reach full shell steel capacity.
- > Energy losses reduction.
- > Higher service life.
- > Quick panels replacement time with fast water connections coupling.
- > Reduced operation downtimes.
- > Reduced maintenance requirements.
- > Increase operational safety.
- > Maximum 60 days delivery time or no-spares storage requirement for customers' with Long Term Service Agreement LTSA contract.

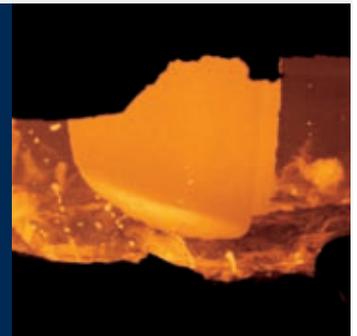


**WATER  
COOLED  
ELEMENTS**

More than  
**21,000**  
water-cooled panels  
and elements for steelmaking  
plant furnaces, sold  
worldwide since 1985



Danieli Long-Life,  
Energy Saving panels:  
**energy  
consumption  
reduction**



**Danieli  
specialists  
add value**  
to on-site services



## DANIELI WATER COOLED ELEMENTS for steelmaking furnaces and equipment

### Danieli water-cooled panel quality

- > All manufacturing process is carried out in accordance with the Danieli Quality Control Plan QCP.
- > The raw materials, such as tubes and return caps are supplied by Danieli-selected manufacturers worldwide in compliance with Danieli's specifications.
- > Welding process in accordance with Danieli Welding Procedure Specifications WPS qualified as per Standards ASME QW 200.1-sez. IX and EN ISO 15609-1:2004.
- > Welding steps: TIG-141/GTAW mode, with inert gas shield, to achieve a deep and uniform weld zone and MAG-135/GMAW mode, with active gas shield for a perfect weld finishing.
- > Intermediate pressure test between the two welding steps to leakages detect.
- > Visual and magnetic final weld tests.
- > Final trials with 12h-pressure tests and flow capacity test.
- > For complete furnace wall and roof water-cooled panel sets, a final test stage is carried out with all items on furnace/roof cooling cage assembled and connected.
- > 100% panels tested.



### Danieli water-cooled panel services

- > Water-cooled panels as spares to existing furnaces.
- > Specific design of new panels for all type of furnaces.
- > Engineering of new furnace water cooling system to enhance melting process efficiency through reduced maintenance stops and increased operational safety.
- > Technical support to enhance lifetime expectation.
- > Technical support to improve plant performances.

