

WALKING SURFACES AND PROTECTIVE STRUCTURES

LOCATION

Plant featuring a cell system with cells being in close contact with chlorine gas and sodium metal that form an amalgam which must be continuously refreshed. The amalgam is then moved to another compartment or secondary cell where it reacts with water, leading to the formation of hydrogen gas and concentrated caustic soda.

CLIENT

Chemical company producing chlorine-soda and its by-products using the mercury-based method.

LOCATION	ITALY (FRIULI VENEZIA GIULIA)
USE	WALKING PLATFORMS AND STRUCTURES
PRODUCT	SCH 50/28_ ISO PROFILES (ISOPHTHALIC RESIN)



OBJECTIVE

In this type of plants, the environment is contaminated by mercury which is to be found in soda and in the chlorine gas and sodium metal absorption layer. As a result, all production areas were exposed to these contaminants, so the company decided to sanitize the production areas and the wooden walking surfaces which were polluted by mercury and other chemical compounds. The objective was to replace the wooden walking surfaces with gratings and structures made of materials resistant to chemical products and corrosive processes, requiring very little maintenance. The crucial objective of the company was to guarantee the continuation of production activities in the installation phase. Demand was extremely high and cycles lasted 24 hours; under these conditions the maintenance and replacement intervention entailing the replacement of walking surfaces did not have to lead to a slowdown or an interruption in the continuous production cycle.

SOLUTION

M.M. designed and manufactured the new structures made with fibreglass pultruded profiles in isophthalic resin, focussing especially on safety and resistance to stress and aggressive environments. SCH 50/28_ISO square mesh gratings in isophthalic polyester resin and fibreglass were installed on the floorings. The gratings were certified as durable products which are not subject to a decline in mechanical performance according to the UNI EN ISO 9142/04 standard. The treatment and the "meniscus type" finish applied on the surface make it slip resistant and ensure high adhesion even under wet surface conditions, according to the DIN 51130 standard (R13 V10 level). The material used for M.M. covered gratings is dielectric; as a result, these gratings are certified as excellent insulators according to the EN 61340-2.3 and IEC 61340-4-5 electrical safety standards. The assembly and prefabrication plan devised for the installation enabled to continue plant production during the whole period of installation.