M.M. S.R.L. a socio unico
Fiberglass Reinforced Polymer Gratings and Structures
Via Antonio Zanussi, 300/302
33100 Udine - Italy
Cap. Soc. EURO 100.000 i.v.
P.Iva / C.F. 02984500302
Reg. Imp. PN-UD 02984500302
PEC mm-grigliati@pec-neispa.com
tel. +39 0432 522970
fax +39 0432 522253
info@mmgrigliati.it

FRP STRUCTURES FOR DRINKING WATER STORAGE TANKS

CLIENT	REGIONAL PROVIDER OF WATER SERVICES IN WALLONIA (BELGIUM)
LOCATION	JODOIGNE – WALLONIA - BELGIUM
USE	STRUCTURES FOR THE SAFE INSPECTION OF DRINKING WATER STORAGE TANKS
PRODUCT	PARAPETS, CIRCULAR WALKWAY, FIXED LADDER AND FIXED LADDER WITH ACS FORMULATION (SUITABLE FOR DIRECT CONTACT WITH DRINKING WATER)
SERVICE	DESIGN, SUPPLY AND AFTER-SALES ASSISTANCE

OBJECTIVES

The client needed to create structures for the safe inspection of drinking water storage tanks that, once emptied, require periodic sanitization and the repair of the inner lining. The works involved the replacement of damaged painted steel parapets, in addition to the construction of a circular walkway on brackets, overhanging the gap between the circular walls of the drinking water tank, with an internal diameter of 13.3 m at 7.7 m elevation. A new external fixed ladder was also required for access to the walkway at that height, along with the installation of a new 7.7 m fixed ladder inside the drinking water tank. Therefore, the structures had to be light, easy to install, not requiring maintenance, as well as being suitable for direct contact with drinking water.

THE SOLUTION

The client opted for the composite material rather than traditional stainless steel. The choice was based not only on the competitive price but also on the lightness of the structures (a 6 m fixed ladder with 3.5 m safety cage is weighing approximately 40 kg), on the lack of any requirement for post-installation maintenance and on the ease of installing completely or partially preassembled elements.

In particular, the ladder with ACS formulation inside the tank was supplied in small modules, to be inter-connected on-site with special bolted joints, small enough for handling and hoisting inside the gap.

The installation position, however, made it impossible to install the ladder closed to the internal wall of the tank and so simple standard anchor plates could not be used.

To solve the problem, truss beam retainers were made with ACS-certified profiles and stainless steel bolted joints, which made it possible to reach and connect to the closest anchor point on the curved walls.

M.M.'s technical office oversaw the entire project, from design to construction.