



Verniciatura Industriale Pesarese  
Coating Services  
Solutions against time



# CML CEMENT MORTAR LINING

Cement-mortar-lined and cement-mortar-coated steel pipe combines the physical strength of steel with the protective qualities of cement mortar. The lining, applied centrifugally, creates a smooth, dense finish that protects the pipe from tuberculation and provides a measure of corrosion protection. There are several fields of application: waterproofing of drinking water's tanks and cisterns, irrigation canals, foundation walls, elevator shafts, or even for decorative purposes.

## Long-lasting corrosion protection



The smooth interior surface will provide a high flow coefficient for an higher lifespan of the pipeline under normal operating conditions. In addition, the cement-mortar coating results in a tough, durable, and rugged coating that forms an alkaline environment where oxidation or corrosion of the steel is inhibited.

## Water transport



Cement Mortar Lining (CML) is specifically conceived for rehabilitating steel and cast iron pipes designed for the transportation of water, whether drinkable, industrial or marine. The purpose of installing a cement/mortar lining to the interior wall of the pipe is to reduce the process of tuberculation inside the pipe network. CML provides an area of high pH near the pipe wall and a barrier between the water and the pipe, reducing its susceptibility to corrosion.

## Other advantages CML









This technique can be used also to rehabilitate pipelines for the transportation of crude oil and fuel. CML layer, besides protecting the internal surface of the pipe from corrosion, occludes the holes that can be present in the pipe, restoring its waterproofing. It is in fact mainly used in rehabilitating aqueducts suffering from widespread leaks. The thickness of the layer of the mortar can vary according to need.

## Application

 **Internal lining**

## Applicability - **Limitless amount**

-  **SMALL AND LARGE PIPES**
-  **STANDARD FITTINGS**
-  **BENDS**
-  **FLANGES**
-  **CUSTOM PIECES**
-  **VALVES**
-  **FIELD JOINTS**

## Inspection & Testing

**In our internal laboratory, we perform all the tests and inspections during all the project's phases, carried out with NACE certified staff.**

## Coating typical properties

**Fire reaction according to EN 13501-1 :**

A1 Euroclasse

**Waterproofing :** see the next scheme

## Coating capacity

### PIPES

**Diameter** from 1/2" to 120"

Indefinite maximum unit **length**

Maximum unit **weight** 15,000 kg

### JOINTS AND/OR CUSTOM PIECES

*(Bends, tees, reducers, flanges, etc.)*

Maximum **size** 3.0 x 3.0 x 13.5 meters

Maximum **unit weight** 15,000 kg

Maximum **thickness** of the coating 3,5 mm

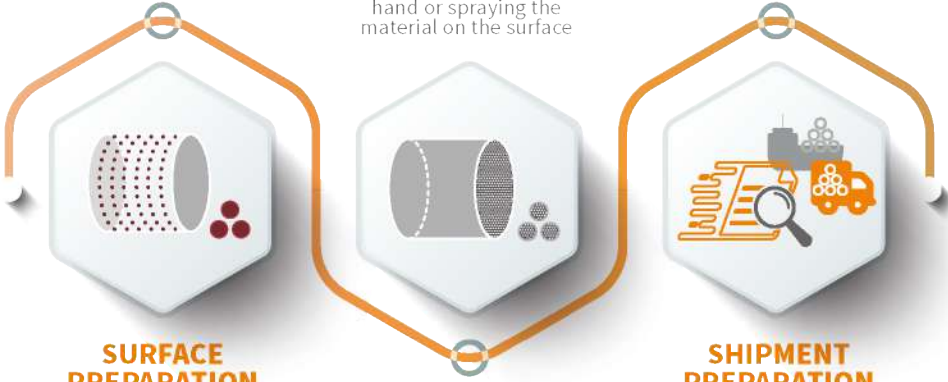




# CEMENT MORTAR PRODUCTION PROCESS

## CEMENT MORTAR LINING

Cement-mortar lining shall be uniform in thickness, applied by hand or spraying the material on the surface



### SURFACE PREPARATION

The steel surface is thoroughly cleaned and blasted

### SHIPMENT PREPARATION

Final inspection is carried out in our internal laboratory when the goods are fully produced. Then packed and in all respects ready for shipment



## GENERAL TESTING

These are merely approximate values adjustable according to clients' requirements.

PROPERTY	TEST DESCRIPTION	TYPICAL VALUES
Compression resistance	EN 12190	24h $\geq 8$ N/mm <sup>2</sup> ; 7d $\geq 20$ N/mm <sup>2</sup> ; 28d $\geq 30$ N/mm <sup>2</sup>
Bending strength	EN 12190	24h $\geq 2$ N/mm <sup>2</sup> ; 7d $\geq 5$ N/mm <sup>2</sup> ; 28d $\geq 7$ N/mm <sup>2</sup>
Permeability coefficient	EN 1062-3	W < 0,1 ( III Class: low permeability )
Water vapor transmission	EN ISO 7783	Sd < 1,5 m ( I Class: water vapor permeable )
Buoyancy resistance	EN 14891	method A7, positive and negative buoyancy 2,5 atm



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