

COR-TEN steel Lifetime expectations

We kindly explain the COR-TEN™ steel lifetime expectations for the outside environment. It is obvious that the surrounding environment, dust, chemicals, salt and moisture will effect on the time the protective patina layer will form. COR-TEN steel should have wet and dry cycles in order to get proper oxide layer. If COR-TEN steel is wet all the time, it will behave like ordinary carbon steel.

The oxide layer, so called "patina" which will be formed during wet and dry cycles, will have protective properties against further rusting. The design lifetime and expectations are based on real measurements of the steel material. The uniform surface of patina layer will prevent the rusting and in case of scratches the new patina layer will form during the time. In the picture below are the measurement results of COR-TEN steel weight loss/rust penetration.

Picture 1. Weight loss / rustiness speed.

Recommended corrosion allowances for weathering steel (in outdoor applications)

Type of environment	Corrosion allowance (mm) to be added to one plate side for each 10-year period of use	
	The first 10-year period	Subsequent 10-year periods
Rural atmosphere	0,1	0,05
Urban atmosphere	0,2 ¹⁾	0,05 ¹⁾
Industrial atmosphere	0,2 ²⁾	0,1 ²⁾

¹⁾ The main contaminant in the air is SO₂.
²⁾ In addition to SO₂, chlorine in the air. Also areas in the immediate vicinity of the sea.

Since the steel supplier cannot know or control the environment where the COR-TEN steel is used we are not able to give exact lifetime guarantee.

With Kind Regards,



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