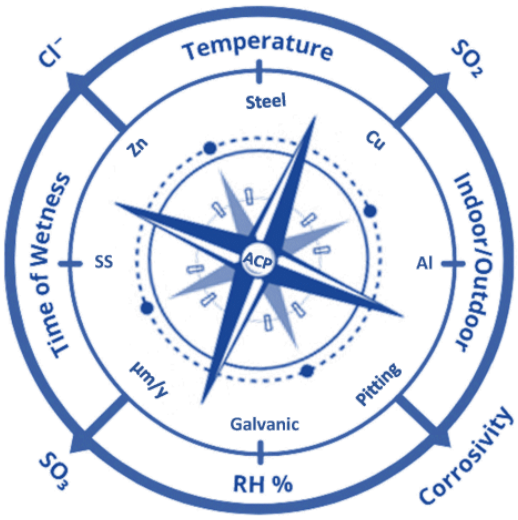


Corrosion Modeling Software and Corrosion Prediction Software Series

Atmosphere-Compass®: Atmospheric Corrosion Prediction and Modeling for Metals and Alloys

The Ultimate Software Solutions to Costly Atmospheric Corrosion

Version 12.4

★ **Performance** ★ **Functionality** ★ **Usability**

Anytime Anywhere Any Device Any OS
No USB dongles No installation No Browser Plug-ins

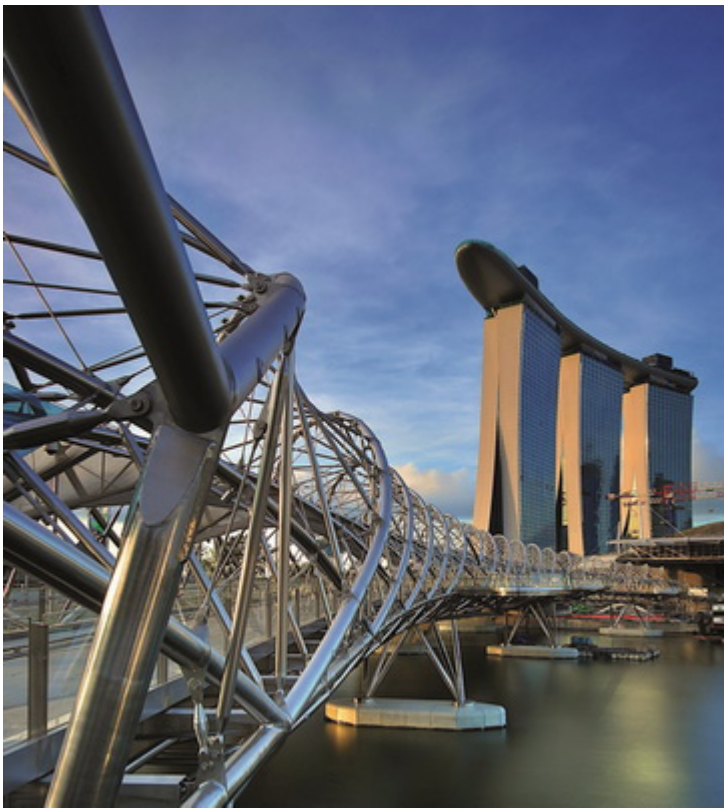
Contact Us for Licensing Details

Why WebCorr | Performance Guarantee | Unparalleled Functionality | Unmatched Usability | Any Device Any OS | Free Training & Support | CorrCompass

Overview of Atmosphere-Compass: the Software Tool for Atmospheric Corrosion Prediction and Modeling

Atmosphere-Compass is the only device and OS independent software tool on the market for the service life prediction and modeling of atmospheric corrosion of metals and alloys in compliance with ISO 9223 and ISO 9224. Designers, architects, OEM engineers, consultants, operation personnel, maintenance and inspection engineers can quickly determine the expected service life of a structure or component exposed to indoor or outdoor atmospheres, anytime, anywhere, on any device running any OS without the need to install or download anything. Atmosphere-Compass also predicts the corrosion rate, the maximum and average

corrosion depth, the rust rating number and rust area ratio of equipment or structures based on the following inputs:



- material type/grade
- age of structure
- nominal thickness
- exposure condition - indoor or outdoor
- ISO exposure environments, or
- site specific data if available (temperature, relative humidity, sulfur dioxide (SO_2) deposition rate, chloride deposition rate, and distance from the shore)

The outputs of Atmosphere-Compass include the following:

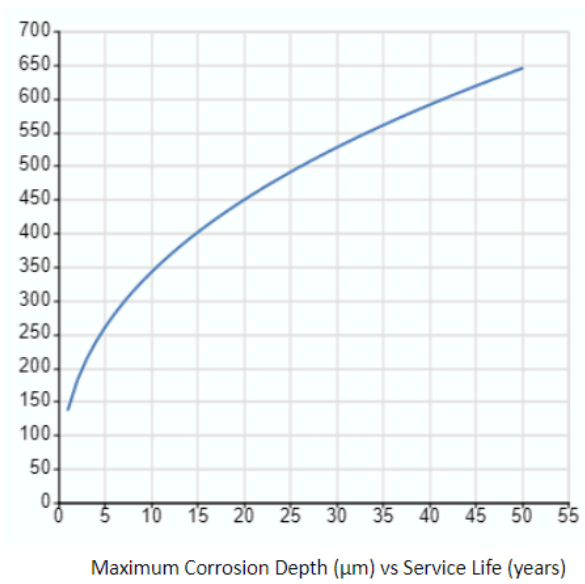
- the atmosphere corrosivity category
- the atmosphere corrosivity ranking
- the degree of rust and stains on the surface measured by the rust rating number (RN) and the rust area ratio (%) as per BS ISO 23721 standard.
- the maximum or average corrosion depth at the specified age of the equipment or structure
- the corrosion rate at the specified age of the equipment or structure
- the remaining life of the equipment or structure
- a plot of the corrosion depth (μm) vs. service life in years

Figures below show the screen shots of Atmosphere-Compass.

Main | Site-Specific Data

Atmosphere-Compass ®: Atmospheric Corrosion Prediction and Modeling Version 11.3.10

Structure ID	Façade on Sunshine Tower at 123 ABC Street	
Material	Type 410	
Age of Structure	Years	2.000
Nominal Thickness	mm	0.600
Exposure Condition	Outdoor	
Exposure Environment	F	
Corrosivity Category	CX	
Atmosphere Corrosivity	Extreme	
Rust Rating Number	1	
Rust Area Ratio (%)	69%	
Maximum Corrosion Depth	µm	182.248
Corrosion Rate	µm/y	35.812
Remaining Life	Year	39.000



Maximum Corrosion Depth (µm) vs Service Life (years)

Exposure Environment	Outdoor
A	Dry or cold zone, atmospheric environment with very low pollution and time of wetness, e.g. certain deserts, Central Arctic/Antarctica.
B	Temperate zone, atmospheric environment with low pollution (SO2 < 5 µg/m3), e.g. rural areas, small towns. Dry or cold zone, atmospheric environment with short time of wetness, e.g. deserts, subarctic areas.
C	Temperate zone, atmospheric environment with medium pollution (SO2: 5 µg/m3 to 30 µg/m3) or some effect of chlorides, e.g. urban areas, coastal areas with low deposition of chlorides. Subtropical and tropical zone, atmosphere with low pollution.
D	Temperate zone, atmospheric environment with high pollution (SO2: 30 µg/m3 to 90 µg/m3) or substantial effect of chlorides, e.g. polluted urban areas, industrial areas, coastal areas without spray of salt water or, exposure to strong effect of de-icing salts. Subtropical and tropical zone, atmosphere with medium pollution.
E	Temperate and subtropical zone, atmospheric environment with very high pollution (SO2: 90 µg/m3 to 250 µg/m3) and/or significant effect of chlorides, e.g. industrial areas, coastal areas, sheltered positions on coastline.
F	Subtropical and tropical zone (very high time of wetness), atmospheric environment with very high SO2 pollution (higher than 250 µg/m3) including accompanying and production factors and/or strong effect of chlorides, e.g. extreme industrial areas, coastal and offshore areas, occasional contact with salt spray.

Figure 1 Atmosphere-Compass Predicts the rate of atmospheric corrosion and the remaining life of structures.

Under the specified exposure conditions shown in Figure 1 above, Atmosphere-Compass predicts, the corrosion rate, the accumulated depth of corrosion at the specified age, and the remaining life of the structure.

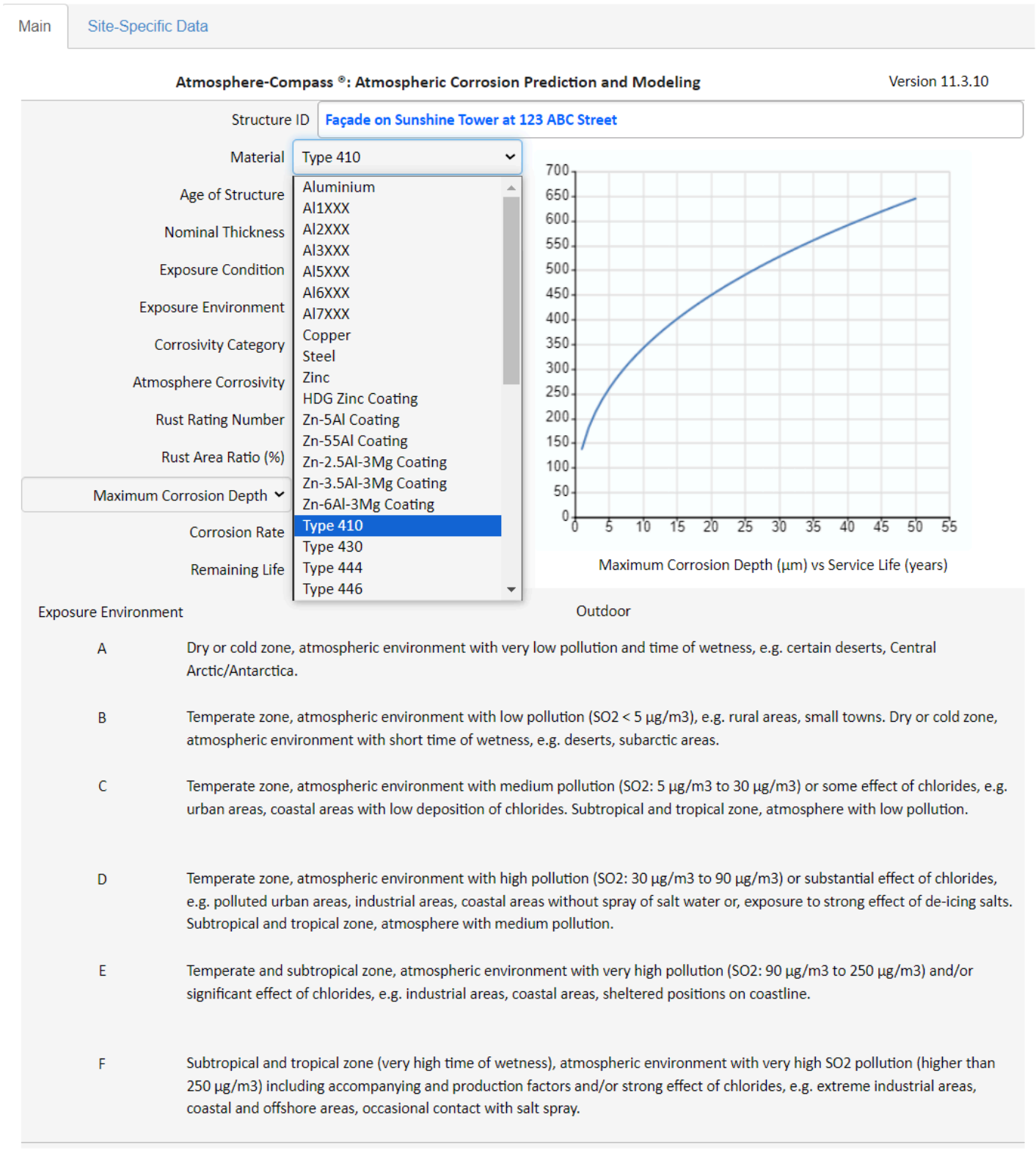


Figure 2 Atmosphere-Compass Predicts Atmospheric Corrosion of Metals, Alloys, and Metallic Coatings.

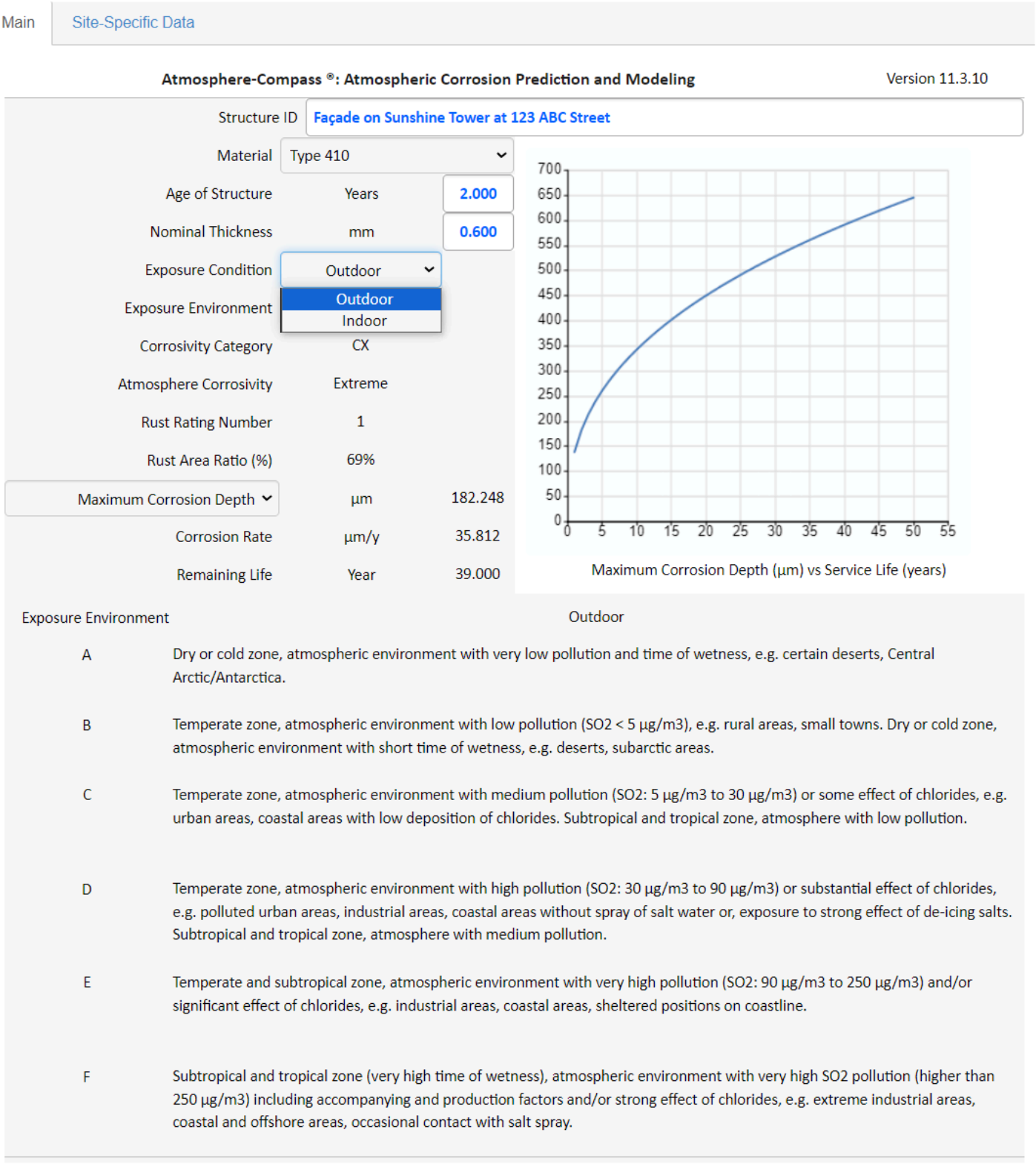


Figure 3 Atmosphere-Compass Predicts Atmospheric Corrosion in Indoor and Outdoor Environments.

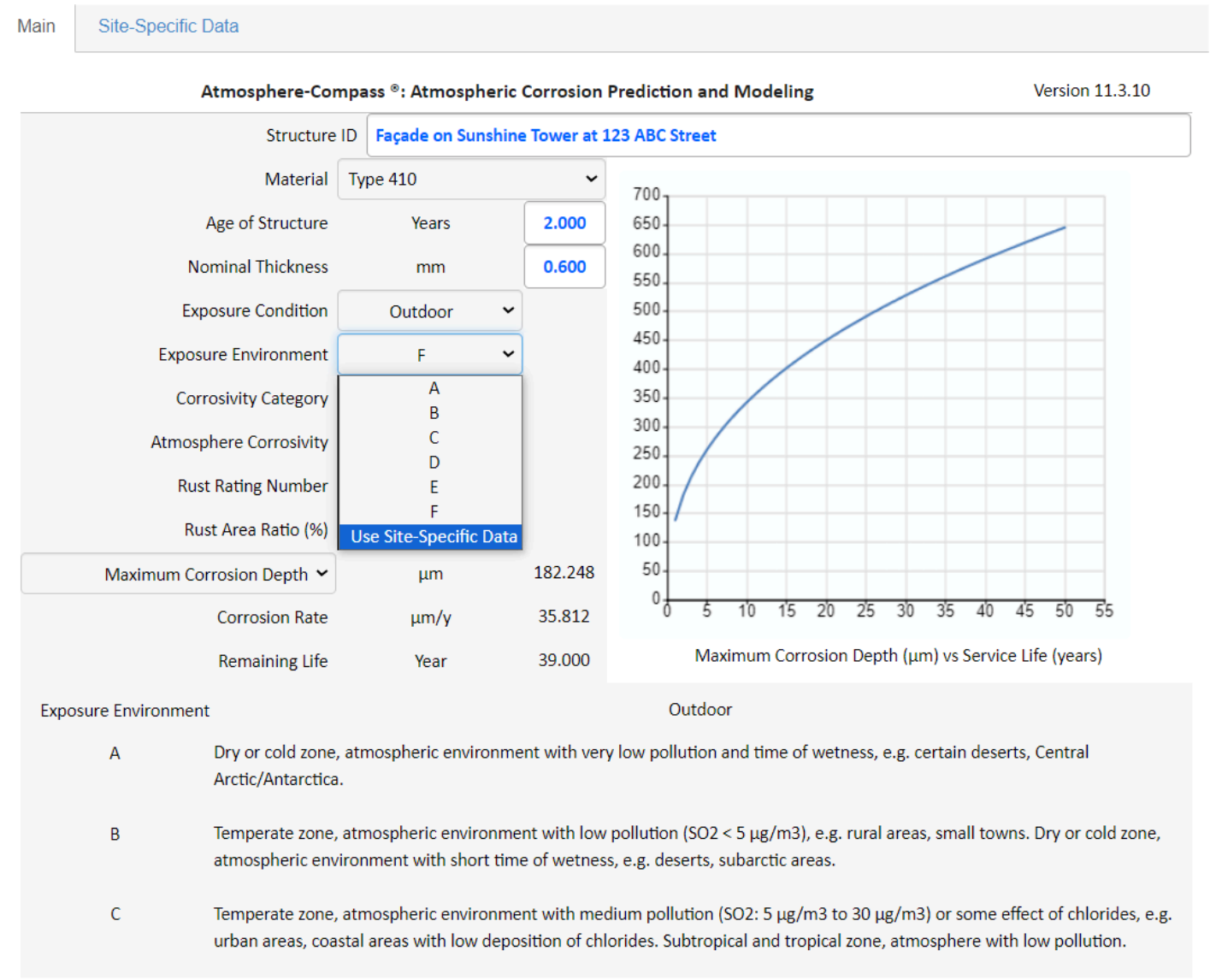


Figure 4 Users can select ISO exposure environment or enter site specific data in Atmosphere-Compass for precise modeling of service life.

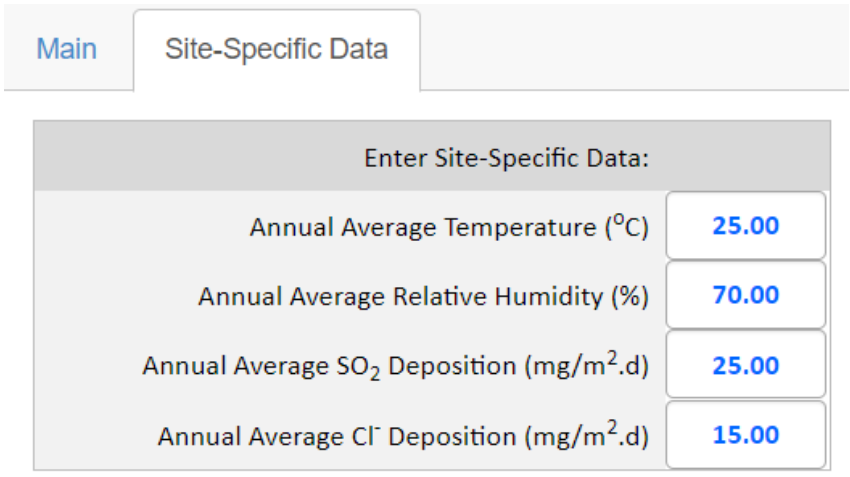


Figure 5a Users can enter site specific data in Atmosphere-Compass for precise modeling of service life.

If the annual average SO2 deposition rate or the annual average chloride deposition rate at the site location is not available, users of Atmosphere-Compass can simply enter the distance of the site from the industrial zone (Figure 5b) and/or the distance of the site from the shore (Figure 5c), the software will compute the corrosion rate accordingly taking into account of the distance effect.

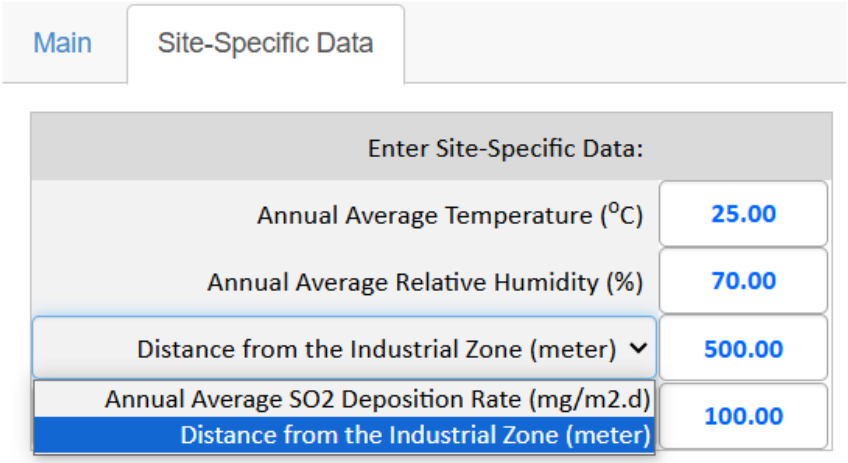


Figure 5b Users can enter site specific data in Atmosphere-Compass for precise modeling of service life.

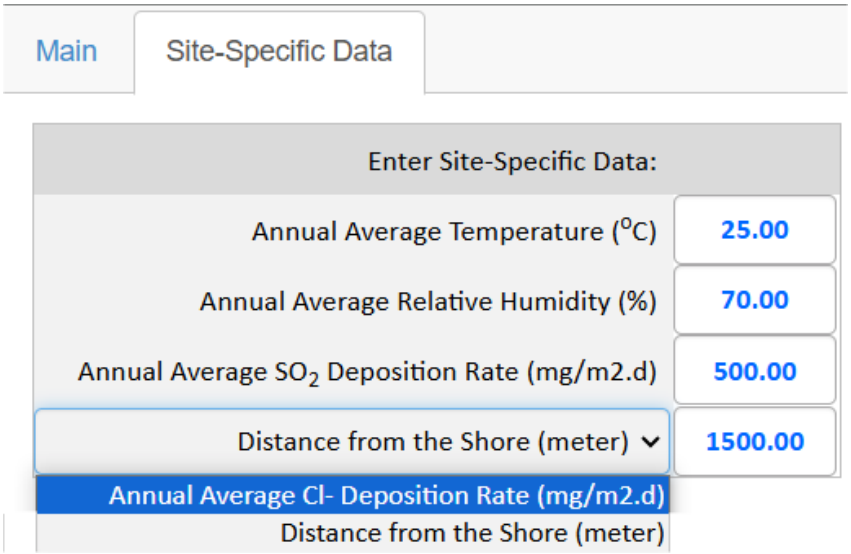


Figure 5c Users can enter site specific data in Atmosphere-Compass for precise modeling of service life.

Atmosphere-Compass models and predicts atmospheric corrosion of metals and alloys including commonly used stainless steels and duplex steels. Following is the list materials included in Atmosphere-Compass:

Aluminium

Al1XXX

Al2XXX

Al3XXX

Al5XXX

Al6XXX

Al7XXX

Copper

Steel

Zinc

HDG Zinc Coating

Zn-5Al Coating

Zn-55Al Coating

Zn-6Al-3Mg

Zn-3.5Al-3Mg

Zn-2.5Al-3Mg

Type 410

Type 430

Type 444

Type 446

Type 304

Type 304L

Type 304LN

Type 316

Type 316L

Type 316LN

Type 317

Type 317L

Type 317LMN

Type 321

Type 347

904L

254SMO

AL-6X

AL-6XN

Incoloy 825

Inconel 625

Duplex 2205

Duplex 2304

Duplex 2507

Duplex 2707HD

The powerful applications of Atmosphere-Compass are truly unlimited in engineering design, corrosion prediction and corrosion modeling, materials selection, and remaining life estimation of equipment and structures exposed to atmospheric environments.

Click here to contact us for licensing details and experience the power of Atmosphere-Compass.

Atmosphere-Compass, giving you the right directions in Atmospheric Corrosion Prediction and Modeling