To whom it may concern

Subject: Magnelis® lifetime estimations

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1. Scope

This document provides guidelines on the use of Magnelis® with a coating weight of 310 or 430 g/m^2 across the surface of the steel substrate, excluding cut edges and perforated areas.
It provides an estimate of the lifetime of Magnelis® in various environments. These estimations are only valid for outdoor environments. Indoor environments, as well as applications in permanent contact with substances such as soil or concrete are excluded.
The expected lifetimes are indicative. They are provided as an indication only and must be distinguished from lifetime indications covered by a guarantee ArcelorMittal may grant for specific projects.

2. About Magnelis®

Magnelis® is a metallic, zinc-based coating, which includes 3.5% aluminium and 3.0% magnesium. The corrosion resistance of metallic coated steels is defined by both the thickness of the coating, and its composition. Studies run by ArcelorMittal and various universities have clearly demonstrated that a magnesium content of 3% is required to achieve a significant increase in corrosion resistance compared to other standard metallic coatings. ArcelorMittal's R&D department has selected the optimum chemical composition of Magnelis® to provide the best performance, even in aggressive environments.
Magnelis® offers superior corrosion resistance thanks to its long-lasting self-healing effect. When exposed in an outdoor environment, Magnelis® forms a protective coating layer on the surface of the steel. The layer is very dense and insulates the surface from the surrounding environment, leading to excellent corrosion resistance.

3. Application design

The following criteria must be followed when creating any application with Magnelis®:

- Fixings must not contain any copper or lead parts which come into direct contact with the Magnelis®. Any material liable to cause corrosive run-off onto the Magnelis® (such as copper or lead) must be avoided.
- Any damage to the Magnelis® during or after construction must be repaired, where necessary to maintain the full corrosion resistance integrity of the Magnelis® coating.

- The application must be designed so that stagnant water does not come into contact with Magnelis®. A slope of at least 2 degrees is recommended.
- Magnelis® should not be used in areas with almost permanent condensation.
- All contact with wet insulation material must be avoided.

This list is not exhaustive. Please consult your latest local construction regulations for additional design guidance.

4. Expected lifetime*

The expected lifetime* is the estimated length of time Magnelis® will effectively protect the steel against perforation.
Extensive outdoor exposure tests of Magnelis®, carried out by ArcelorMittal's R&D department, have been used to estimate the expected lifetime of Magnelis® in the environments shown in the following table.

Magnelis® expected lifetime before first maintenance per outdoor environment category referring to zinc (ISO 9223 and ISO 12944-2 norms)

Environment category	Magnelis® ZM 310 (see EN 10346) Expected lifetime*	Magnelis® ZM430 (see EN 10346) Expected lifetime*
C2 / Exterior: exposed rural inland	> 90 years	> 130 years
C3 / Exterior: urban inland or mild coastal	> 60 years	> 80 years
C4 / Exterior: industrial inland or urban coastal No industrial pollution – No C4I	> 40 years	> 55 years
C5M / high salinity coastal (>300 m of the sea) No industrial pollution – No C5I	> 35 years	> 50 years

** An expected lifetime estimation has to be well distinguished from a lifetime covered by an eventual guarantee given by ArcelorMittal for a given project. Estimations are based on reports from French Corrosion Institute and ArcelorMittal.*

Corinne Dieu
Product Development ArcelorMittal
Industry R&D Portfolio