

DIN EN 10209:2023-09 (E)

Cold rolled low carbon steel flat products for vitreous enamelling - Technical delivery conditions

Contents		Page
European foreword		4
1	Scope	5
2	Normative references	5
3	Terms and definitions	6
4	Designation	6
5	Requirements	6
5.1	Steelmaking and manufacturing processes	6
5.2	Method of deoxidation	6
5.3	Chemical composition	7
5.4	Suitability for vitreous enamelling	7
5.5	Delivery condition	7
5.6	Choice of properties	8
5.7	Mechanical properties	8
5.8	Surface characteristics	8
5.8.1	General	8
5.8.2	Surface appearance	8
5.8.3	Surface finish	8
5.9	Stretcher strain marks	9
5.10	Weldability	9
5.11	Tolerances on dimensions and shape	9
6	Tests	9
6.1	General	9
6.2	Inspection units	9
6.3	Number of tests	9
6.4	Sampling	9
6.5	Test methods	10
6.6	Retests	10
6.7	Inspection documents	10
7	Identification	10
8	Packaging	10
9	Disputes	11
10	Information to be supplied by the purchaser at the time of ordering	11
Annex A (normative)	Methods for determining the resistance to fish scaling of a steel sheet for enamelling	13
A.1	Hydrogen permeation test	13
A.1.1	Field of application	13
A.1.2	Principle	13
A.1.3	Apparatus	13
A.1.4	Sampling	13

A.1.5	Preparation	13
A.1.6	Check the degreasing quality	14
A.1.7	Permeation test procedure	14
A.1.8	Hydrogen detection	14
A.1.9	Evaluation	15
A.2	Fish scaling test using special enamel	16
Annex B	(normative) Method for determining mass loss (iron loss) due to pickling for steel grades for direct enamelling in accordance with 5.4.2	17
B.1	Principle	17
B.2	Apparatus	17
B.3	Sampling	17
B.4	Preparation	18
B.5	Weighing	18
B.6	Cleaning	18
B.7	Checks on degreasing quality	18
B.8	Pickling	18
B.9	Drying	19
B.10	Weighing after cooling	19
B.11	Evaluation	19
Annex C	(normative) Method for determining the adherence level of enamel applied to a steel sheet	20
C.1	Field of application	20
C.2	Principle	20
C.3	Apparatus	20
C.4	Description of the apparatus	20
C.5	Procedure	20
C.6	Adherence level evaluation	21
C.6.1	Flat pieces	21
C.6.2	Thinner sheet steel < 0,3 mm	21
C.6.3	Deformed pieces	21
Annex D	(informative) Characteristics for the selection of enamelling steel grades	25
Bibliography	26