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ICS 77.140.01

DRAFT EAST AFRICAN STANDARD

Pre-painted metal coated steel sheets and coils — Specification

EAST AFRICAN COMMUNITY

Fouth Edition 2022

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Foreword

Development of the East African Standards has been necessitated by the need for harmonizing requirements governing quality of products and services in the East African Community. It is envisaged that through harmonized standardization, trade barriers that are encountered when goods and services are exchanged within the Community will be removed.

The Community has established an East African Standards Committee (EASC) mandated to develop and issue East African Standards (EAS). The Committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the public and private sector organizations in the community.

East African Standards are developed through Technical Committees that are representative of key stakeholders including government, academia, consumer groups, private sector and other interested parties. Draft East African Standards are circulated to stakeholders through the National Standards Bodies in the Partner States. The comments received are discussed and incorporated before finalization of standards, in accordance with the Principles and procedures for development of East African Standards.

East African Standards are subject to review, to keep pace with technological advances. Users of the East African Standards are therefore expected to ensure that they always have the latest versions of the standards they are implementing.

The committee responsible for this document is Technical Committee EASC/TC 35, *Steel and steel products.*

This third edition cancels and replaces the second edition (EAS 468: 2013), which has been technically revised.

Pre-painted metal coated steel sheets and coils — Specification

1 Scope

This East African Standard specifies requirements, sampling and test methods for pre-painted metal coated steel sheets and coils.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EAS 11, Hot-dip *galvanized plain and corrugated steel sheets — Specification*

EAS 410, *Hot-dip aluminium-zinc coated plain and corrugated steel sheets — Specification*

ISO 15184, *Paints and varnishes — Determination of film hardness by pencil test*

ISO 15110, *Paints and varnishes — Artificial weathering including acidic deposition*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at http://www.iso.org/obp

3.1
top (face) side
side of the pre-painted sheet, which is exposed to weathering

3.2
bottom (reverse) side
side of pre-painted sheet opposite the exposed weathering side

3.3
coating
layer of material applied to a metal surface to provide protection

3.4
paint
liquid or powder containing pigments, which, when applied to a substrate, forms a film having protective, decorative or specific technical properties

3.5
top coat
additional layer on the surface which is exposed to weathering (with or without integral lubricant) applied on the substrate in order to achieve functional properties such as additional corrosion protection, torque/tension performance, colour, chemical resistance

3.6
primer
first complete layer of paint of a coating system applied to an uncoated surface; the type of primer varies with the type of surface and its condition, the intended purpose, and the coating system being used

3.7
wash coat
thin organic coating applied to the back or unexposed side of the pre-painted sheet (also known as a backer coat)

NOTE The purpose of the wash coat is to provide protection against damage to the top-side coating during shipment and storage and also provide some additional durability to the unexposed side during the service life of the product.

3.8
chalking
formation on a pigmented coating of a friable powder evolved from the film itself at or just beneath the surface

3.10
fading
loss in colour intensity experienced by pigmented organic coatings over time, generally due to the effect of ultraviolet radiation

3.9
gloss
lustre, shininess or reflecting ability of a surface

3.10
sheets
broad, thin, mass or pieces of metal including flat and profiled

3.11
substrate
surface to which a coating material is applied or is to be applied.

3.12

metal-coated sheet

sheet coated with metallic material such as aluminium, zinc, silicon, etc.

4 Substrate

The substrate shall conform to all the requirements of EAS 11 and EAS 410 as per appropriate specification for the quality ordered.

5 Classification and symbol

5.1 Classification of durability of paint coatings

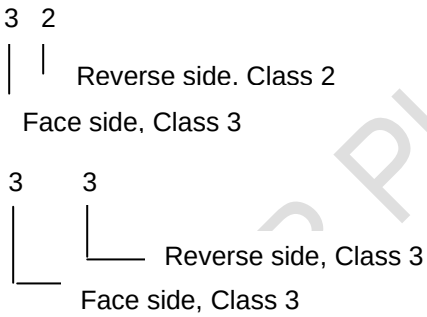
5.1.1 The durability of paint coatings shall be classified into three classes and their symbols shall be as given in Table 1.

Table 1 — Classification of durability of paint coatings and designations

Classification	Symbol	Durability
Class 1	1	Two or more coats having durability as specified in Table 3
Class 2	2	Two coats having durability as specified in Table 3
Class 3	3	One coat having durability as specified in Table 3
NOTE For sheets and coils for which the quality is guaranteed for both sides, the classes of paint coating durability which have differences between the face side and the reverse side may be altered by agreement between the purchaser and the manufacturer.		

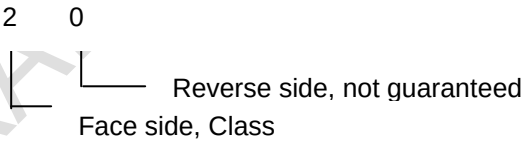
5.1.2 The classes of paint coating, durability for the face side and the reverse side shall be expressed in 2-digit figures consisting of a combination of the designation of durability for the individual sides.

Example:



5.1.3 For both-side paint coating for which the quality is guaranteed for the face only, the non-guaranteed side shall be expressed by the digit 0.

Example:



NOTE The term “guarantee” implies that the product is in compliance with the quality requirements specified in Clauses 6, 8, 10 and 12.

5.2 Classification of applications

5.2.1 Sheets and coils shall be classified into twelve types, and their classified symbols shall be as given in Table 2.

Table 2 A — Chemical composition

Classified Symbol of Grade for Base metal	Chemical composition in percentage (%), Maximum			
	C	Mn	P	S
SGHC	0.15	0.80	0.05	0.05
SGCC	0.15	0.80	0.05	0.05
SGCH	0.18	1.20	0.08	0.05
SGCD 1	0.12	0.60	0.04	0.04
SGCD 2	0.10	0.45	0.03	0.03
SGCD 3	0.08	0.45	0.03	0.03
SGCD 4	0.06	0045	0.03	0.03
SGC 340	0.25	1.70	0.20	0.05
SGC 400	0.25	1.70	0.20	0.05
SGC 440	0.25	2.00	0.20	0.05
SGC 490	0.30	2.00	0.20	0.05
SGC 570	0.30	2.50	0.20	0.05

Table 2 B — Classification of sheets and coils

Classified symbol of grade for pre-painted	Nominal thickness (base coated metal) mm	Application	Classified symbol of grade for base metal
CGCC	0.25 ≤ x ≤ 1.6	Commercial soft	SGCC
CGCH	0.25 ≤ x ≤ 1.0	Commercial hard	SGCH
CGCD 1	0.40 ≤ x ≤. 2.3	Drawing	SGCD 1
CGCD 2	0.40 ≤ x ≤. 2.3		SGCD 2
CGCD 3	0.60 ≤ x ≤. 2.3		SGCD 3
CGCD 4	0.60 ≤ x ≤. 2.3		SGCD 4
CGC 340	0.25 ≤ x ≤ 1.6	Structural	SGC 340
CGC 400	0.25 ≤ x ≤. 1.6		SGC 400
CGC 440	0.25 ≤ x ≤ 1.6		SGC 440
CGC 490	0.25 ≤ x ≤ 1.6		SGC 490
CGC 570	0.25 ≤ x ≤. 1.6		SGC 570

NOTE 1 G refers to the type of metal coating as described in EAS 11 and EAS 410.

NOTE 2 Nominal thickness other than those listed in the above table may be decided as agreed upon between the purchaser and the manufacturer.

NOTE 3 Examples of indications for types of sheets and coils are given in Annex A.

5.2.2 For the type of coating and the coating mass on the metallic coated base metal for paint coating, EAS 11 and EAS 410 shall apply.

5.2.3 Coating systems supplied under this standard shall consist of primer coat covered by various types and thicknesses of topcoats except class 3. The combination of primer and topcoat shall be classed as either a two-coat thin film system or as a two-coat (or more) thick film system. The organic coating shall consist of a primer and a topcoat on the top (exposed) side and an optional wash coat on the bottom (unexposed) side that can either be tinted or non-tinted.

5.2.4 In the case of sheets and coils for roofing and architectural sidings the symbol R for roofing and the symbol A for architectural siding shall be suffixed to the classified symbols given in Table 2.

5.2.5 For sheets and coils subjected to corrugating, the symbol W and the shape symbol for corrugated sheets shall be suffixed to the classified symbols given in Table 2.

5.2.6 For corrugation, the commercial soft and the commercial hard qualities listed in Table 2 shall be used.

5.2.7 For roofing and architectural siding uses (exterior exposed building products) Class 2 or higher in the classification of paint coating durability shall be applied.

6 Paint coating durability

6.1 Sheets and coils shall be subjected to the durability test given in Table 3. The salt spray test shall be carried out in accordance with 13.2.1 and 13.4, and no defects, except for slight blistering and rust on the test piece, shall be found on the test piece as a result of this test having been continued for the duration of time specified in Table 3.

Table 3 — Durability test (salt spray and weathering test)

Coating class	Gloss, % loss	Colour	Dry Film Thickness (primer), µm	Minimum duration of salt spray test, hours	Minimum duration accelerated weathering test, hours
Class 1	30	Delta E of 4	4 - 6	2 000	1 500
Class 2	35	Delta E of 6	4 - 6	500	1 000
Class 3	40	Delta E of 8	Not applicable	200	500
NOTE Delta E is a single number that represents the “distance” between two colours.					

6.2 For class 3 in the classification of paint coating durability the symbol indicating a coating mass of D122 in accordance with EAS 11 (equivalent for other coatings) or more shall be applied to the base metal for paint coating.

6.3 When sheets and coils of Class 3 in the durability classification are subjected to the dew-cycle type accelerated weathering test in accordance with the provision of 13.2.2 and 13.4, they shall not show substantial discolouration, fading or substantial chalking as a result of the test having been continued for the duration of time specified in Table 3 (Delta E minimum).

7 Surface protective treatments

For protective treatments after painting when applied on the surface of sheets and coils, the types and symbols shall be as given in Table 4.

Table 4 — Classification of surface protective treatments and their symbols

Classification of surface protective treats	Symbol
Protective films	P
Wax application	T

8 Physical properties of paint coatings

8.1 After being tested for items marked with “X” in Table 5 in accordance with 13.3 and 13.4, sheets and coils shall, by visual inspection, be free from the defects given in Table 5.

Table 5 — Physical properties of paint coatings

Characteristic	Commercial hard (CGCH); Structural (CGC 570)	Commercial soft (CGCC), Drawing (CGCD 1, CGCD2, CGCD3, CGCD4) Structural (CGC 340, 400, 440, 490)	Requirement	Test method
Bending adhesion	–	X	No peeling on the outer surface of the bent portion not less than 7 mm apart from either side edge of the test piece	13.3.2 (Bend test)
Paint film	X	X	No scratch marks on the paint film	13.3.3 (pencil hardness test)
Impact resistance	–	X	No peeling	13.3.4 (impact test)
Adhesion	X	–	No irregularities on the tested portion	13.3.5 (cross scoring test)
Flexibility	X	X	No peeling	Flexibility test
Abrasion	X	X	No burnished appearance in rubbed area after 100 double rubs on both topcoat and wash coat.	13.3.6 (abrasion [MEK] test)

8.2 Test items for sheets and coils for roofing, architectural siding, and corrugation shall be in accordance with Table 5.

8.3 Paint adhesion and peeling shall be checked by applying standard filament tape.

9 Dimensions

9.1 The dimensions of sheets and coils shall be expressed in millimetres

9.2 The standard nominal thickness of sheets and coils shall be in accordance with EAS 11 and EAS 410.

9.3 For corrugated steel sheets the dimensions shall be in accordance with EAS 11 and EAS 410.

9.4 For troughed steel sheets (for both domestic and industrial applications) the dimensions shall be in accordance with Annex A. Other dimensions for new profiles may be produced as per agreement between the supplier and the purchaser.

9.5 The mechanical properties for pre-painted steel sheets and coils shall be in accordance EAS 11 and EAS 410.

10 Paint coating (dry film thickness)

10.1 Primer

The purpose of the primer is to serve as the bond between the substrate and the topcoat and to offer added corrosion protection for the entire system. The primer shall be compatible with the topcoat in order to ensure optimum properties of the coating system. For this reason, the primer is usually not specified by the purchaser but it is generally selected by the coating supplier or pre-painted sheet producer for optimum compatibility.

For building products, primer thickness shall be 5 µm with tolerance of ± 1 µm. High performance primers with films as thick as 75 µm with tolerance of ± 8 µm may be specified.

10.2 Wash coat

For building products, wash coat thickness shall be 8 µm with tolerance of ± 1 µm.

10.3 Top coat

10.3.1 Different top-coats shall be selected based on the performance or appearance requirements desired. For building products, top-coat thickness shall be 15 µm with tolerance of ± 5 µm. High-performance top-coats may be specified. Other upgraded systems may specify the application of two or more layers of top-coats.

10.3.2 The top-coat shall be applied for the exposed side of the sheet. However, the unexposed side may be ordered with the same coating as the topside.

10.3.3 A wash coat or backer coat shall be applied to the bottom side.

NOTE The selection of a top-coat depends on the performance parameters required such as chalking and fading, plus the corrosion resistance needed, which shall take into account the severity of the service environment.

11 Shapes

11.1 Camber

Maximum camber values for sheets and coils shall be as given in Table 6.

Table 6 — Maximum camber values

Dimensions in millimetres

Width	Length	
	Flat sheet/coil	
	≤ 2 000	> 2 000
≤ 630	4	4 in any 2 000 of length
> 630	2	2 in any 2 000 of length

11.2 Deviation from squareness

Deviations from squareness for flat sheets shall be expressed by *A/W* x 100 (%) as shown in Figure 1 and shall not exceed 0.3 %.

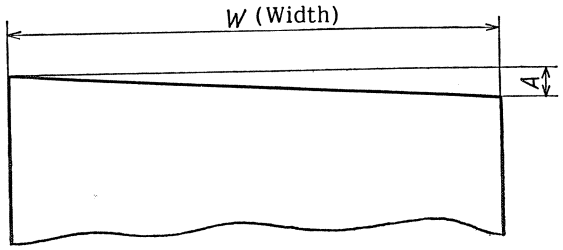


Figure 1 — Deviations from squareness for flat sheets

11.3 Flatness

11.3.1 Flatness for sheets shall be as given in Table 7.

Table 7 — Flatness

Dimensions in millimetres

Width	Classification, max.		
	Bow	Edge wave	Center buckle
≤ 1 000	12	8	6
1 000 < x ≤1 250	15	10	8

11.3.2 Flatness of sheets shall be determined as they are placed on a surface plate. The value shall be obtained by subtracting the sheet thickness from maximum deviation from the horizontal flat surface and the flatness shall be applied to the upper surface of the sheet.

12 Appearance

Sheets and coils shall be free from defects detrimental to practical use. However, in the case of coils, they may contain some minimal imperfections, including welds and floating.

13 Tests

13.1 General

The properties of the substrate and the organic coating system, combined with the method of forming, determine the life expectancy and general appearance of the final product. Each coating system has different qualities in regard to gloss, flexibility, fading, chalking, and resistance to cracking at bends, abrasion resistance, dirt retention, and resistance to varying atmospheric conditions. All of these factors should be considered in any end application. The test methods used to measure some of these parameters shall be in accordance with EAS 11 and EAS 410.

13.2 Endurance tests for coatings

13.2.1 Salt spray test

The salt spray test shall be done as follows:

a) a test piece shall be 50 mm or more in width and 100 mm or more in length; and

b) the testing method shall comply with ISO 11997-1.

13.2.2 Accelerated weathering test

The accelerated weathering test shall be as follows.

a) a test piece shall be 50 mm or more in width and 100 mm or more in length; and

b) the testing method shall comply with the accelerated weathering test specified in ISO 15110.

13.3 Tests for physical properties of paint coating

13.3.1 Sampling of test specimens

For corrugated sheets, test specimens shall be taken from flat sheets prior to corrugation.

Specimens shall be taken from products of the same quality, dimensions, coating mass, and color.

The sampling of test specimens for the T-bend, pencil hardness, impact, cross-scoring and abrasion (MEK) tests shall comply with the following requirements:

a) for continuously paint-coated coils or cut length from continuously paint-coated coils, one test specimen shall be taken from each 50 t or its fraction;

b) for sheets manufactured by paint-coating base metal cut to a specified length, one test specimen shall be taken from not more than 3 000 sheets;

c) apply zinc coating weight test for galvanized plain substrate;

d) apply aluminium zinc and silicon weight test for the 55 % aluminium zinc substrate; and

e) the testing method shall comply with the accelerated weathering test specified in ISO 15110.

13.3.2 Bend test

The bend test shall be as follows:

a) The test piece shall have a width of 75 mm to 125 mm and a length suited for the test. Unless otherwise specified, one test piece shall be cut out of each test specimen paralleled to the rolling direction of the base metal.

b) By referring to the internal spacing of bend shown in Table 8, the test piece shall be bent manually as shown in Figure 2.

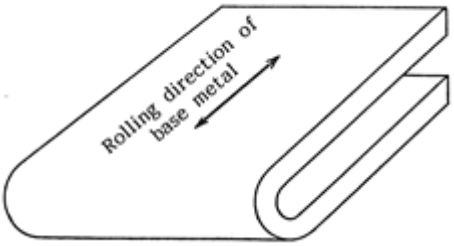


Figure 2— Direction of bend test

c) The bend test shall be applied to the symbols indicating coating masses of Z 27 (equivalent for other coatings) and under. For sheets and coils using an alloyed type as base metal for paint coating, the above shall be used as reference only.

d) For sheets and coils for roofing, architectural siding, and corrugation, the internal spacing of bend shall be in accordance with that for, the relevant classified symbol in Table 8.

Table 8 — Internal spacing of bend

Classified symbol	Bend angle	Nominal thickness, mm	Internal spacing of bend
CGCC	180°	≤ 0.40	2 sheets of nominal thickness
CGCH	–	0.40 < x ≤ 1.6	3 sheets of nominal thickness
CGCD 1	180°	0.40 ≤ x ≤ 1.6	2 sheets of nominal thickness
		0.40 < x ≤ 0.40	3 sheets of nominal thickness
CGC 400	180°	≤. 0.40	3 sheets of nominal thickness
		0.40 < x ≤ 1.6	3 sheets of nominal thickness
CGC 440	180°	≤ 0.40	4 sheets of nominal thickness
		0.40 < x ≤ 1.6	5 sheets of nominal thickness

13.3.3 Pencil hardness test

The pencil hardness test shall be as follows:

a) a pencil having the hardness symbols given in Table 9 and meeting the requirements of ISO 15184 shall be used;

Table 9 — Symbols for pencil hardness

Durability classification	Hardness symbol
Class 1	H
Class 2	H
Class 3	F

b) the pencil shall be sharpened so as to expose about 3 mm of lead. While being held at right angles to an abrasive paper of No. 400 or finer which has been laid on a hard, flat surface, the point of the lead shall be made to draw a continuous circle gently and thus be ground down so as to obtain a flat surface with sharp edges at the tip. The tip of the lead shall be ground flat for each test;

c) holding the prepared pencil at about 45º to the surface of the test specimen, straight lines shall be drawn with it in the direction shown Figure 3, with the load being applied of about 10 N; and

d) the lines shall be not less than 20 mm in length and not less than three in number.

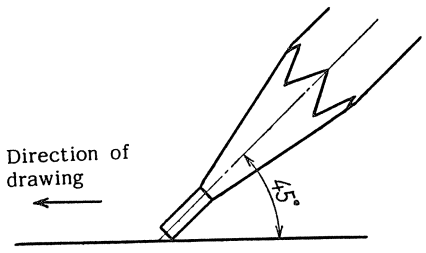


Figure 3 — Pencil hardness testing method

13.3.4 Impact test

The impact test shall be as follows:

a) a weight shall be dropped onto a test face from a Du Point type impact tester, as shown in Figure 4;

b) the mass of the weight shall be 500 g ± 1 g, and the radius of the impact point shall be 6.35 mm ± 0.03 mm; and

c) the weight shall be dropped from a height of 500 mm above the test piece.

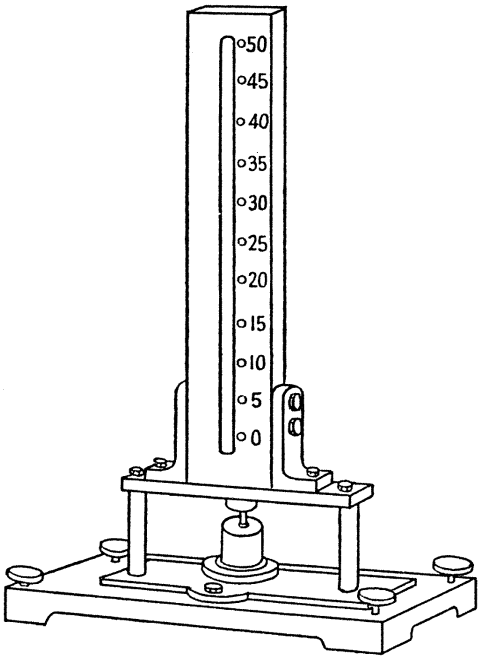


Figure 4 — Du Point Impact-deformation tester

13.3.5 Cross-scoring test

The scoring test shall be as follows:

a) straight lines shall be scored with a safety razor blade or other pointed objects so as to reach the surface of the coating through the paint film and to form squares; and

b) eleven straight lines shall be scored crosswise at right angles, at intervals of 1 mm.

13.3.6 Abrasion – Methyl Ethyl Ketone (MEK) test

13.3.6.1 Apparatus

The following apparatus and materials shall be used for the abrasion MEK test:

a) test piece (100 mm x 200 mm);

b) MEK ;

c) cheese cloth;

d) squeeze bottle; and

e) solvent resistant gloves.

13.3.6.2 Procedure

The abrasion test shall be done as follows:

a) select an area of the coated surface to be tested. Clean the area with tap water and a dry cloth. Mark a section of the cleaned area, measuring 150 mm by 25 mm with a solvent resistant marker, in which to perform the MEK double rubs; and

b) fold a 300 mm square piece of cheese cloth so that the thickness is doubled and saturate it until dripping wet with MEK. Place an index finger in the center of the cheese cloth and gather the remaining cloth. With the index finger at a 45° angle to the surface, rub with moderate pressure over the marked area. Do not allow more than 10 s to elapse between wetting the cloth and beginning to rub the coating. Wet the cloth as often as needed without lifting it from the surface. One forward and backward motion constitutes one double rub. Do a control test adjacent to the MEK test area. Use only a dry clean cloth rubbed in the same manner as the original test for the control test to establish the effects of the cloth on the coating.

13.4 Cautions for testing

The tests require the following cautions:

a) since the durability and physical properties of sheets and coils are affected by environmental conditions and by paint coating flaws incurred in handling, hair cracks on processed surfaces, etc., testing shall be conducted on flat sheets with normal surfaces; and

b) the temperature for tests on physical properties shall be from 5 ºC to 35 ºC.

14 Inspection

Inspection shall be as follows:

a) the durability test is a performance test, and the test results shall comply with the requirements in Clause 6;

b) the results of tests and inspection on the physical properties of paint coatings, dimensions, shape and appearance shall satisfy the requirements specified in Clauses 6, 8, 9, 10, 11 and 12; and

c) when part of the test results for physical properties fail to meet the requirements, a retest using double the number of test pieces taken from the same lot is permitted.

15 Marking

15.1 Reverse side marking

15.1.1 For the sheets and coils which have passed inspection and the quality of which is guaranteed for one side only, the reverse side markings shall be as shown in Figure 5.

For both-side guarantees, the sheets and coils shall be marked only when so specified.

15.1.2 Each sheet or coil shall be legibly and indelibly marked.

15.1.2.1 For roofing, the following shall be indicated:

a) manufacturer's name and/or trade name;

b) nominal thickness;

c) batch number;

d) designation of the substrate; and

e) paint coating class.

f) Gauge 32 sheets, shall be clearly marked "Not for roofing" in every 1 m along the length and with a font size of 12 mm width.

15.1.2.2 For other than roofing the following items may be indicated, upon agreement between the purchaser and the manufacturer:

a) manufacturer's name or trade name;

b) nominal thickness;

c) classified symbol (including shape symbol for corrugated sheets);

d) batch number; and

e) designation of the substrate.

15.2 Package marking

Where sheets and coils are packed, each package shall be legibly and indelibly marked with the following information:

a) manufacturer's name and/or trade name;

b) classified symbol (including shape symbol for profiled sheets);

c) name of colour;

d) symbol indicating coating mass;

e) dimensions; and

f) number of sheets or mass where applicable.

16 Storage, transportation and fabrication

16.1 Cautionary measures for storage, transportation, and fabrication shall be supplied with every sale in accordance with 16.2 to 16.4.

16.2 For the storage of sheets and coils, selection of a well-ventilated indoor place virtually free from dust and moisture should be specified. Mixed loading with corrosive substances such as chemicals should be avoided.

16.3 Every precaution should be taken against paint coating damage and contact with water during transportation and transfer.

16.4 The formability of paint coatings deteriorates with the descent of temperature. When sheets and coils stored in a low-temperature warehouse are to be fabricated, the temperature of the material should be elevated to normal temperature.

16.5 The indication of sheets and coils shall normally be made in terms of classified symbol, symbol for guaranteed side(s), symbol for surface protective treatments, symbol indicating coating mass, name of colour, and dimensions, as given in Figure 5 (a, b, c, d).

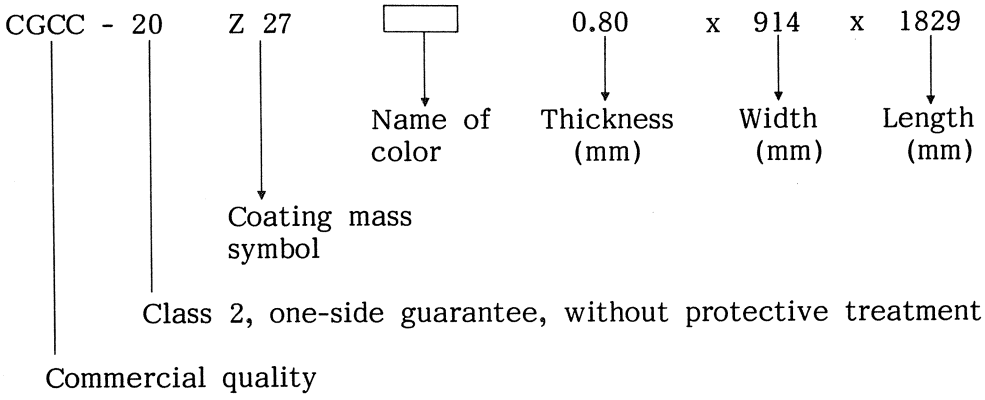


Figure 5 a) — For sheet

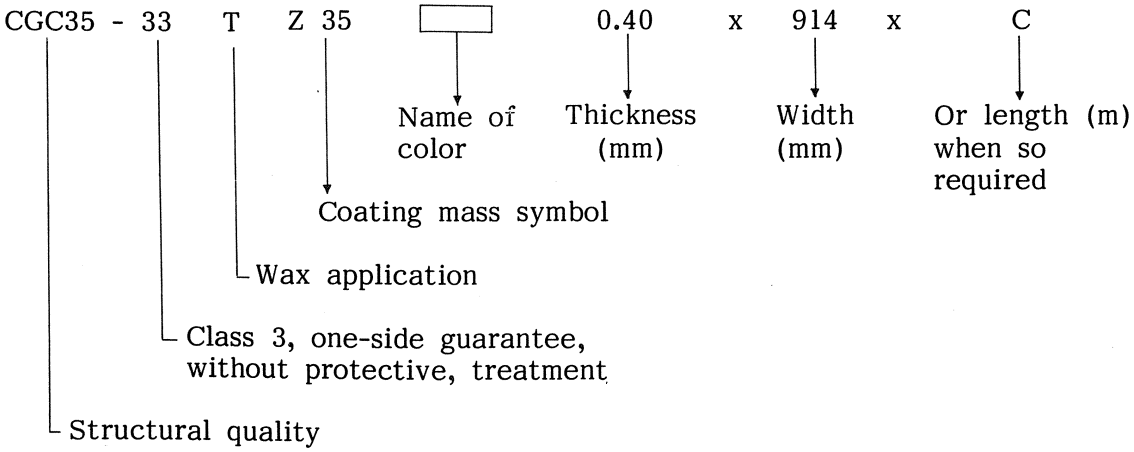


Figure 5 b) — For coil

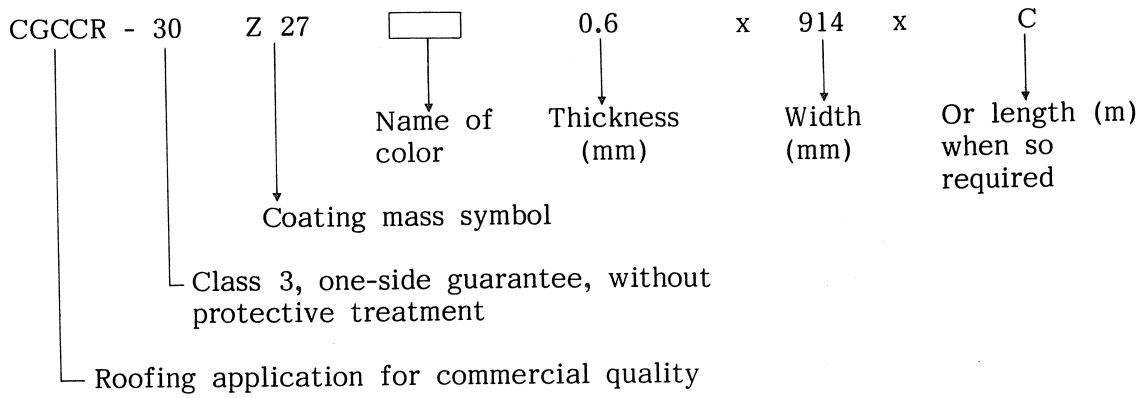


Figure 5 c) — For roofing (coil)

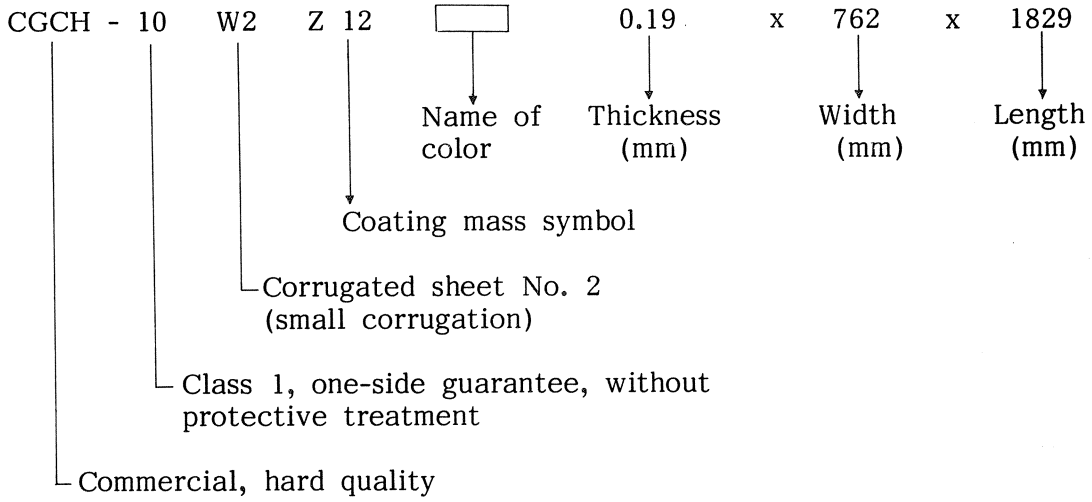


Figure 5 d) — For corrugated sheet using commercial, hard

Bibliography

[1] JIS G 3302:2010, Hot-dip zinc-coated steel sheet and strip

Annex A
(informative)

Examples of indications for types of sheets and coils

Examples of indications for types of sheets and coils are given as follows:

- CGCC-20

  Pre-painted hot-dip zinc-coated steel sheets and coils, commercial, Class 2, one-side guaranteed

- CGCCR-22

  Pre-painted hot-dip zinc-coated steel sheets and coils for roofing, using Commercial Quality, Class 2, both-side guaranteed

- CGC 400-32

  Pre-painted hot-dip zinc-coated steel sheets and coil, structural, Class 3 (Class 2 for reverse side), both-side guaranteed

- CGCCR-20 W2

  Corrugated steel sheets for roofing of pre-painted hot-dip zinc-coated steel sheets and coils, using Commercial Quality, Class 2, one-side guaranteed

Annex B
(informative)

Ordering information

B.1 The coated flat sheet covered by this standard is produced on continuous lines to decimal thickness only. The thickness of the sheet includes the base steel and the metallic coating. The thickness of the organic system is in addition to the substrate (base steel and metallic coating).

B.2 Orders for material under this specification should include the following information, as applicable, to describe the required product adequately:

a) product name (pre-painted steel sheet);

b) designation of substrate, (including quality designation and grade, if required;

c) metallic coating type and weight;

d) organic coating system designation;

e) dry organic film thickness top side and bottom side (the top side typically consists of a primer and topcoat and the bottom side a primer and a wash coat; however the bottom side may be ordered to the same quality as the top side);

f) protection required (waxed or strippable coating);

g) dimensions (thickness, width, either flat or formed (overall or cover) and length (if cut length) and, if applicable, type of formed configuration;

h) coil size requirement: maximum outside diameter, acceptable inside diameter, and maximum weight (mass);

i) cut length requirement maximum lift weight (mass);

j) special requirements, if any; and

k) application (part identification and description).

