



Technical BULLETIN

► Report on:

Durability

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North American Standards for Minimum Metallic Coatings on Lightweight Steel Framing Members

Introduction

An important part of the specification of cold formed steel framing members (lightweight steel framing) is the metallic coating. This coating is typically zinc (galvanized) or 55% aluminum-zinc alloy and comes in a variety of coating weights (mass) to suit the intended environment. The North American cold formed steel industry has standardized the minimum metallic coating requirements for loadbearing and non-loadbearing applications. These requirements arise in a number of different documents as described below.

Canadian Standards Association

The design and specification of lightweight steel framing structural members must comply with CAN/CSA-S136-12 *North American Specification for the Design of Cold-Formed Steel Structural Members*. This standard has adopted by reference AISI S200-12, *North American Standard for Cold-Formed Steel Framing – General Provisions*. Within the S200 standard there are requirements for corrosion protection of steel framing members. For Canada, the minimum protective coatings for loadbearing (structural) members are given in Table A4-1.

Table A4-1: Coating Designations

Coating Classification	Coating Designator	Minimum Coating Requirements	
		Zinc Coated ^A oz/ft ² (g/m) ²	55% Al-Zinc ^B oz/ft ² (g/m) ²
Metallic Coated	CP 60	G60 [Z180]	AZ50 [AZM150]

^A Zinc-coated steel sheet as described in ASTM A653/A653M.

^B 55 % Aluminum-zinc alloy-coated steel sheet as described in ASTM A792/A792M.

National Building Code of Canada

The National Building Code of Canada 2010, Sentence 9.24.1.2.1) states that the steel studs and runners shall conform to AISI S201-07, *North American Standard for Cold-Formed Steel Framing – Product Data*. Within the S201 standard there are requirements for corrosion protection as given in Table B3-1.

Table B3-1: Coating Weight [Mass] Requirements (Metallic Coatings)

Material Designation	Coating Designation
Type H and Type L (structural)	G60 [Z180] ^A AZ50 [AZM150] ^B
Type NS (non-structural)	G40 [Z120] ^A AZ50 [AZM150] ^B

^A Zinc-coated steel sheet as described in ASTM A653/A653M.

^B 55 % Aluminum-zinc alloy-coated steel sheet as described in ASTM A792/A792M.

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American Society for Testing and Materials (ASTM)

Some building project specifications will refer to ASTM standards for materials. The two that cover lightweight steel framing components are:

ASTM C645, Standard Specification for Nonstructural Steel Framing Members; and, ASTM C955, Standard Specification for Load-Bearing (Transverse and Axial) Steel Studs, Runners (Tracks), and Bracing or Bridging for Screw Application of Gypsum Panel Products and Metal Plaster Bases.

Within these standards there are minimum requirements for corrosion protection. ASTM C645 specifies that “Members shall have a protective coating conforming to Specification A653/A653M – G40 minimum or shall have a protective coating with an equivalent corrosion resistance.” ASTM C955 specifies that “Members shall have a protective coating conforming to Specification A653/A653M – G60 minimum, or equivalent corrosion resistance, or shall have a rust-inhibitive coating providing equivalent corrosion resistance.”

Conclusions

The specification in Canada for the minimum metallic coating on lightweight steel framing members can come from a number of documents. In all case the minimum coating requirements are consistent. Heavier metallic coatings may also be available, but the minimum coatings shown above are the standards.

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