SECTION 05 40 00 - COLD-FORMED METAL FRAMING

1.1 SECTION INCLUDES

A. Qualitative requirements for bracing, fasteners, and related accessories for cold formed non-load metal framing.

1. Exterior non-load bearing wall framing.
2. Interior non-load bearing wall framing.
3. Ceiling joist framing.
4. Soffit framing

1.2 SYSTEM DESCRIPTION

A. Design Requirements: Calculate structural characteristics of cold-formed metal framing according to AISI's "Specification for The Design of Cold-Formed Steel Structural Members" and its "Standard for Cold-Formed Steel Framing – General Provisions".

1. Design exterior nonaxial load bearing framing to accommodate lateral deflection without regard to contribution of sheathing materials.
2. Headers: Design according to AISI's "Standard for Cold-Formed Steel Framing – Header Design."
3. Roof Trusses: Design according to AISI's "Standard for Cold-Formed Steel Framing – Design."

    a. Note: Prefabricated trusses that meet the qualitative requirements are acceptable.

B. Performance Requirements: Engineer, fabricate, and erect cold-formed metal framing to withstand design loads within limits and under conditions required.

1. Design framing systems to withstand design loads without deflections greater than the following:

    a. Cold-Formed Metal Framing: Lateral deflection of L/240 of the wall height, unless otherwise noted.

        1) Limit deflection to L/600 when supporting masonry.

    b. Floor Joists: Vertical deflection of L/480 for live loads and L/360 for total loads of span.
    c. Ceiling Joists: Vertical deflection of L/240 of the span.
    d. Roof Trusses: Vertical deflection of L/240 of the span.

1.3 COLD-FORMED METAL FRAMING MATERIALS

A. Galvanized Steel Sheet: ASTM A 1003, Structural Grade, Type H, metallic coated of grade and coating, and as follows:

1. Coating Designation: G 60 (Z 275), unless otherwise noted.

    a. Provide G90 where studs backup masonry, and where indicated.

2. Grade: As required for structural performance.

B. System Components: With each type of metal framing required, provide manufacturer's standard steel runners (tracks), blocking, lintels, clip angles, shoes, reinforcements, fasteners, and accessories as recommended by manufacturer for applications indicated, as needed to provide complete metal framing system.

1. Steel Sheet for Vertical Deflection and Drift Clips: ASTM A 653, structural steel, zinc coated, of grade and coating as follows:

    a. Grade: As required by structural performance.
    b. Coating: G60.

C. Framing Accessories: Supplementary framing, bracing, bridging, and solid blocking, web stiffeners, gusset plates, stud kickers, girts, joist hangers, and end closures.

D. Deflection Limits for Exterior Wall Framing shall not exceed:

1.	EIFS	L/240
2.	Brick veneer	L/600
3.	Tile	L/720
4.	Thin brick	L/360
5.	Cultured stone	L/600
6.	Metal panel	L/240

E. Deflection Limits for Interior gypsum board shall not exceed:

1. 1/240***.***

F. Insulation for Inaccessible Voids.

1.4 SUSTAINABILITY CONSIDERATIONS

A. Structural steel with recycled content is a recommended green building practice because it significantly improves material resource efficiency and reduces embodied environmental impacts. In steel-framed buildings, where structural steel represents a major cost component, its high recycled content has a disproportionate positive effect on overall project material sustainability.

B. Product-specific documentation of recycled content for structural steel is recommended because structural steel typically contains recycled material well above default industry assumptions, allowing for more accurate characterization of material resource efficiency and embodied environmental impacts.

END OF SECTION