CODE COMPLIANCE CERTIFICATION PROGRAM

for Cold-Formed Steel Structural and
Nonstructural Framing Members

March 4, 2026

This document has the following changes from the November 2023 version of the program.

- Yellow represents editorial changes.
- Green represents language that has moved from one section of the document to another.
- Blue represents major changes

Implemented by:
The Steel Framing Industry Association (SFIA)
Members and Associate Members

SFIA
STEEL FRAMING INDUSTRY ASSOCIATION

DISCLAIMER

A concerted effort has been made to select appropriate standards and to develop a reliable *Code Compliance Certification (C3) Program*. The Steel Framing Industry Association makes no representation, warranty or guarantee in connection with the standards or the *C3 Program*, and expressly disclaims any liability or responsibility for loss or damage resulting from participation; for any violation of federal, state or municipal regulations with which the underlying standards may conflict; or for the infringement of any patent from the use of the code-referenced standards.

No patent rights are implied by participation in the *C3 Program*. Nothing contained in the *C3 Program* is to be construed as granting any rights, by implication or otherwise, for the manufacture, sale, or use in connection with any method, apparatus or product covered by letters patent, nor as insuring anyone against liability for infringement of letters patent.

PREFACE

The Steel Framing Industry Association (SFIA) developed the *C3 Program* to ensure that steel framing products produced by SFIA member companies can be specified and promoted with confidence of full compliance with the building code. While building codes vary by jurisdiction, this program follows the most recent international standards published by the International Code Council, the most widely recognized building code authority in North America.

The use of steel framing products in building construction is an intelligent choice with benefits to the contractor, designer, owner and environment. The SFIA is dedicated to helping all stakeholders in our industry to be more successful by unifying the industry and expanding the market for the use of cold-formed steel framing systems through promotion, advocacy, education and innovation.

Table of Contents

A. General

A1 Scope

The *program requirements* listed herein are part of a *C3 Program* developed by the Steel Framing Industry Association (SFIA) for *structural, proprietary structural, nonstructural,* and *equivalent nonstructural* cold-formed steel framing. These *program requirements* are *verified* by a *Independent Third Party*, the Program Administrator (*Administrator),* and enforced by the *Compliance Committee*, made up of SFIA members. This *Compliance Program* forms part of an agreement between participating SFIA member manufacturers and contractor/manufacturers (*Licensees*), the Steel Framing Industry Association (*Association*) and the *Administrator*. In the event the Administrator is unable to send notifications and/or perform other such duties, the SFIA has the ability to intervene and perform those duties.

Under the *C3 Program*, a *Licensee* certifies that the designated *structural, proprietary structural,* or *nonstructural* traditional flat and proprietary shapes including equivalent proprietary *nonstructural* cold-formed steel framing it produces meets or exceeds the requirements of the *applicable building codes* and referenced *applicable standards and all such products must be enrolled*. The SFIA provides educational materials to the Licensee and regularly tests the designated Quality Control Agent at each facility or plant to ensure the Quality Control Agent is familiar with the C3 and the minimum requirements for products, materials, and procedures under the C3. The *Administrator validates* the *Licensee's* certification by reviewing and inspecting the *Licensee's quality control processes* and manufacturing practices and performing appropriate testing when necessary to confirm the Licensee's internal processes and practices are effective.

Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall be applicable. Where, in any specific case, different sections of this document specify different requirements, the most restrictive shall govern.

A2 Ownership

The Steel Framing Industry Association (SFIA) owns this *C3 Program*. The *Administrator* is contracted by the *Association* to perform services as outlined within the *program requirements*. The *Administrator* shall seek written approval from the *Association* before performing any other services determined necessary to administer the *C3 Program*.

A3 Eligibility

All *Association* members manufacturing cold-formed steel *structural, proprietary structural, nonstructural,* or *equivalent nonstructural* framing products are required to participate within the *program requirements.* For *Licensees* with more than one manufacturing plant or facility, each plant or facility producing *products* must participate in the *C3 Program* independently. Each participating manufacturing facility shall maintain a designated Quality Control Agent and be subject to audits as outlined in the *Program Requirements* herein.

Assemblies, such as trusses, headers, and jambs, may be made from *products certified* under this *Compliance Program*, but the assemblies themselves may not be *certified under this specific program*.

Manufacturers that only make one class of product, as noted above, must apply and be certified for only the classes of product they produce. Eligibility for the certification of only one product class will be verified through the review of the applicant's current product literature that is provided in accordance with the SFIA By Laws (Article IV.1, section a, subsection 4). For clarity if the manufacturer offers multiple classes of products for sale, all must be certified in the program.

A4 Definitions

Where the following terms appear in this program in italics, they shall have the meaning indicated herein. For terms not specifically defined in Section A4, the definitions in AISI S220, AISI S240, and AISI S100, or commonly accepted meanings within the context for which they are intended shall govern. A definition in this document supersedes all other definitions.

Acceptance Criteria. Criteria developed by ICC-ES for the evaluation of *products* related to an *Applicable Building Code*.

Accredited. Accreditation is the process by which an *Independent Third Party* organization (IAS, A2LA, etc.) certifies that a manufacturer or inspection program complies with established industry standards, such as those defined by the International Building Code (IBC), ASTM, AISI, and ISO. For the C3 Program accredited means the person or service has been recognized under ISO/IEC 17025:2017 and/or SFIA or the Administrator for technical competence.

Accredited independent laboratory. Any laboratory that is certified under ISO/IEC 17025:2017 and accredited to perform the tests listed in this *C3 Program*.

Administrator. Entity contracted by the Steel Framing Industry Association to carry out the Administrator functions of this *C3 Program*. The Administrator shall be accredited in accordance with ISO/IEC 17020.

Applicable Building Codes. The IRC for one- and two-family dwellings or the IBC for all other building structures.

Applicable Standards. Standards referenced in Section A5.

Approved. Approved by the *Administrator and/or Compliance Committee.*

Approved Part Drawing. Schematic that defines the dimensions, including thickness of *product*. The *Administrator* shall require additional dimensions and tolerances for features of *equivalent nonstructural members and/or proprietary structural members* that are deemed structurally significant to the *product* by the *Administrator,* if not already included in the SFIA Product Technical Guide.

Association. Steel Framing Industry Association.

Auditor. *Administrator*'s agent who physically conducts facility audits and submits his findings to the *Administrator*.

Base Steel Thickness. The thickness of the bare steel, exclusive of all coatings.

Certification Labels. The *Association*-owned identifiers developed for this *C3 Program*. The design and information in the *Certification Labels* are determined by the *Compliance Committee* in conjunction with the *Administrator*. *Certification Labels* are to be ordered from the printer identified by the *Association*, and the *Licensee* must submit a copy of the *Compliance Certificate* with the order.

Certified Minimum G40 Sample. An ASTM G40 galvanized coated steel sample meeting the minimum one-sided zinc coating weight of 0.12 oz./sq.ft., and less than the specified 0.20 oz./sq.ft. weight. The sample(s) are used in side-by-side B-117 tests to determine an *equivalent coating*.

Certified Production Facilities List: A listing of facilities that have been inspected and are authorized by the *Administrator* to produce *Certified Products*. The *Certified Production Facilities List* is maintained by the *Administrator* and made available through the *Administrator's and Association's* websites.

Certified Products. *Products* manufactured by the *Licensee* which are certified to meet the *Program* requirements.

Certified Testing Equipment. Equipment used to test the physical properties of the material, including testing yield, tensile, elongation, base steel thickness, or coating weight, where the equipment is certified and calibrated by an independent calibration agency or the original equipment manufacturer on the frequency required by this *Program*..

Code Compliance Certification (C3) Program. The program described herein.

Compliance Certification. Documentation issued by the *Administrator* allowing the *Licensee* to state that the referenced *product* meets the requirements of the *Compliance Program*.

Compliance Committee. A committee comprised of five (5) *Association* members appointed by the *Association*'s Board of Directors. The committee shall be comprised of three (3) manufacturer members, one from each size-category, one contractor member and one distributor member.

Corrective Action. Measures taken to remedy items of noncompliance.

Custom Product. A product manufactured and sold to a custom shape or dimension. A *Custom Product* can not be promoted in any literature or on a website. It must be a product manufactured to a custom request. Custom Products are not required to be enrolled into the Compliance Program and therefore cannot bear the SFIA label.

Day or Days. For purposes of this program's requirements, the term refers to calendar (not business) days.

Design Thickness. The steel thickness used in design, exclusive of coating. The *design thickness* is used to calculate physical properties and performance, except where AISI S100 indicates otherwise.

Documentation. The data furnished to substantiate a claim.

Equivalent Coating. A Metallic Coating for nonstructural members that meets the AISI S220 requirement that a protective coating must provide an equivalent corrosion resistance. Equivalence shall be determined by meeting or exceeding the performance of a *certified minimum G40 sample* in a side-by-side test following the requirements of ASTM B117 specification. Equivalence is determined per Section B2.

Equivalent Nonstructural Member. An *equivalent nonstructural member* is a member that meets the performance requirements of the building code and this *C3 Program* but does not have the same dimensional and/or thickness characteristics as *Standard Products* defined in AISI S220.

Examination, C3 Quality Basics. A test administered by the SFIA to confirm the knowledge and skills of the *Quality Control Agent* at each facility. The test shall include testing of the *Agent's* knowledge of the minimum *Mechanical Properties*, *Quality Control Records*, measuring equipment, auditing procedures and Code Compliance standards in sections A, B, C, and D of this Program. SFIA shall prepare study materials and supply them to Licensees upon request. A passing score for the examination shall be determined by the Technical Director with the approval of the Compliance Committee at the time the Examination is created, and after any revisions to the examination.

Flange. For a C-shape or *stud*, U-shape or track, that portion of the framing member that is perpendicular to the *web.*

Grade. The designation of the minimum yield strength.

IAS. International Accreditation Service is a division of the International Code Council (ICC).

Independent Third Party: A person or company that is accredited but is not the SFIA Member company and has no financial association, ownership, or leadership relationship with the SFIA Member.

Licensee. A manufacturer of *products* that signs license agreements with the *Association* and the *Administrator* that permit participation in the *Compliance Program*.

Lip or *Return Lip.* The part of a framing member that extends from the *flange* as a stiffening element.

Marking. Identification on individual *product* or groups of like *products* to meet the requirements of Section D.

Master Coil. An original *Coil* from the producer that will require additional slitting to make *Slit Coils* that are an appropriate width to manufacture any *Product*.

Material Properties. Yield, Tensile, Elongation, Base Steel Thickness, and Coating Weight.

Metallic Coating. A property of a coating applied to a cold-formed steel member described as the content of metal in percentage of dry film weight. A metallic coating for *nonstructural members* shall have a minimum metallic content of 50.0%.

Mil. A unit of measurement equal to 1/1000 inch.

Mill Certificate. Documentation from the producer of any *Coil* identifying one or more of the *Material Properties* or *Coating* for the *Coil*, including a unique identifying number that can be traced to the specific *Coil*.

Nominal Moment. The nominal flexural strength of a member when lateral-torsional buckling limit state is restrained, but local and distortional buckling are unrestrained as determined by AISI S100. If products fall outside the parameters of AISI S100, they must be tested in accordance with Appendix B

Nonstructural Member. A member in a steel framed system which is limited to a transverse (out-of-plane) load of not more than 10 lb/ft^2 (240 Pa), a superimposed axial load, exclusive of sheathing materials, of not more than 100 lb/ft (1460 N/m), or a superimposed axial load of not more than 200 lbs (890 N). *Nonstructural Members* may be *Standard* or *Equivalent* as defined herein.

Notice of Deficiencies. A report from the *Administrator* to the *Licensee* indicating a *product* or process is out of compliance with the *Program Requirements.*

Notify/Notice or Notification. Written correspondence (or the act of) that is physically transferred between parties (hard-copies). In addition to physical transfer, electronic transfer is acceptable.

Product. A *structural member, proprietary structural, nonstructural, or equivalent nonstructural member*.

Profile Types: Unique shapes or versions of product within a product class.

Program Requirements. The requirements of this *C3 Program*, as specified herein.

Property Certifications: Documentation confirming the *Material Properties* of a *Coil* in the form of any combination of the following:

a. *Mill Certificates* from the producer of the *Coil*.
b. Test Results from an independent accredited testing lab.
c. Test Results from testing conducted by the Licensee on *Certified Testing Equipment by a qualified technician*.

Proprietary Structural. A structural framing product utilized in cold-formed steel light frame construction (per AISI S240) that is not the traditional C-shape or not listed in the SFIA Product Technical Guide.

Note: For the purpose of clarity, proprietary shapes such as “c” shapes with perforations, modified ends, or flange cuts beyond the scope of AISI specification

are required to be in the program. Products that are ancillary to the framing members such as furring or resilient channels, or components of assemblies such as shaftwall and area separation wall are not required to be in the program. These are examples and not an inclusive list.

Punchout. A hole located along the centerline of the *web* of a steel framing member made during the manufacturing process.

Quality Control Agent. An identified individual employee of a *Licensee* who has passed the Examination, C3 Quality Basics and is responsible for monitoring and maintaining compliance with the C3 at an identified facility. Each facility producing any *Product* must identify the *Quality Control Agent* to the administrator.

Quality Control Records. A Licensee's documentation confirming that product shape and dimensional minimums in Section C are checked in conformance with the Licensee's approved Quality Manual as well as the ability to trace the material and coating properties.

Quality Control Manual (QCM). A *Licensee's* document containing the *Licensee's* approved practices and procedures for measuring *Material Properties* and *Product Dimensions*, approved part drawings, and for maintaining *Quality Control Records* confirming that the practices and procedures are being followed at the time of production.

Qualified Technician: A Qualified Technician is an individual who has demonstrated the mandatory proficiency and competence to:

- Accurately determine the weight of zinc coatings on steel articles in accordance with the procedures outlined in ASTM A90/A90M.
- Conduct tensile testing of metallic materials at ambient temperature in compliance with ASTM A370 and ASTM E8/E8M standards. The technician must be capable of evaluating the following mechanical properties: yield strength, yield point elongation, tensile strength, elongation, and reduction of area.

Adequate documentation shall be provided to the Administrator to confirm training for specific area of responsibility.

Revocation of Compliance Certification. A notification by the *Administrator* that a *product* manufactured at a particular manufacturing facility fails to meet the *program requirements.* The result of the revocation is that the *Licensee* no longer has the authority to certify *products* at that plant.

Slit Coil. A *Coil* that is *the appropriate width to produce the product.* All *Coils* slit from a common *Master Coil* shall be considered a single Coil for material properties.

Standard Coating. Any coating listed in Section B2, Table A4.1 excerpted from AISI S240 for *structural, or* Table 3 Type NS for *nonstructural.*

Standard Nonstructural Member. A *nonstructural* cold-formed steel framing member that meets the dimensional and material requirements of AISI S220.

Structural Member. A member that resists design loads [factored loads] as required by the *applicable building code,* except when defined as a *nonstructural member.*

Stud. A member having a longitudinally extending *web* bordered on each lateral side by perpendicular, longitudinally extending *flanges,* with the *flanges* bordered on one side by the *web* and on the other side by a perpendicular longitudinally extending *lip*.

Substantiate. The process by which the *Administrator* determines that a *Licensee's* certification meets the *program requirements*.

Track. A "C" shaped member having a longitudinally extending *web* bordered on each lateral side by perpendicular, longitudinally extending *flanges*.

Unit. A package of like or similar products.

Web. That portion of a framing member that connects the *flanges.*

END OF DEFINITIONS

A5 Referenced Standards

The following *Standards* or portions thereof, are referenced within this compliance program and shall be considered part of the requirements of this program.

1. Steel Deck Institute (SDI) 2661 Clearview Rd #3, Allison Park, PA 15101

   SDI AISI S100, *North American Specification for the Design of Cold-Formed Steel Structural Members.*

2. Steel Framing Industry Association (SFIA) 513 W Broad St STE 210, Falls Church, VA 22046

   SFIA AISI S220, *North American Standard for Cold-Formed Steel Framing – Nonstructural members.*

   SFIA AISI S240, *North American Standard for Cold-Formed Steel Structural Framing*

   SFIA AISI S916, *Test Standard for Cold-Formed Steel Framing - Nonstructural Interior Partition Walls with Gypsum Board*

3. American Society for Testing and Materials International (ASTM), 100 Barr Harbor Drive, West Conshohocken, Pennsylvania 19428-2959.

   ASTM A 90/A90M, *Standard Test Method for Weight [Mass] of Coating on Iron and Steel Articles with Zinc or Zinc-Alloy Coatings*.

   ASTM A370, *Standard Test Methods and Definitions for Mechanical Testing of Steel Products*.

   ASTM A428/A428M, *Test Method for Weight [Mass] of Coating on Aluminum-Coated Iron or Steel Articles*.

   ASTM A463/A463M, Standard Specification for Steel Sheet, Aluminum-Coated, by the Hot-Dip Process.

   ASTM A653/A653M, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

   ASTM A792/A792M, Standard Specification for Steel Sheet, 55 % Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.

   ASTM A875/A875M, Standard Specification for Steel Sheet, Zinc-5 % Aluminum Alloy-Coated by the Hot-Dip Process.

   ASTM A1003/A1003M, *Standard Specification for Steel Sheet, Carbon, Metallic- and Nonmetallic-Coated for Cold-Formed Framing Members*.

ASTM B117, *Standard Practice for Operating Salt Spray (Fog) Apparatus*.
ASTM C840, *Standard Specification for Application and Finishing of Gypsum Board.*

ASTM C1002, *Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs*.

ASTM E72, *Standard Test Methods of Conducting Strength Tests of Panels for Building Construction.*

4. International Code Council, Inc. (ICC), 500 New Jersey Avenue, NW, 6th Floor, Washington, DC 20001.

2024 International Building Code® (IBC)

2024 International Residential Code® (IRC)

5. ICC Evaluation Service (ICC-ES), 3060 Saturn Street, Suite 100, Brea, CA 92821.

ICC-ES AC46, *Acceptance Criteria for Cold-Formed Steel Framing*

ICC-ES AC86, *Acceptance Criteria for Cold-Formed Steel Framing Members- Interior Nonload-bearing Wall Assemblies.*

ICC-ES AC85, *Acceptance Criteria for Test Reports*

A6 Administrator Roles and Responsibilities

A6.1 Licensee Application

Association Manufacturer and Contractor/Manufacturers Members must apply for *C3 Authorization* for each manufacturing facility which manufactures eligible *products* within 30 days of joining the association, adding a new product, or opening a new facility. *In addition, Association Manufacturer* and Contractor/Manufacturers *Members must receive C3 Authorization for each manufacturing facility which manufactures products within 180 days of joining the Association, adding a new product, or of opening a new facility.*

All official communication with the administration and/or *Compliance Committee* shall be in writing or by electronic submission. Verbal communications are not considered to be official. All communications concerning the *Compliance Certification Program* shall be done through the *Administrator*.

Upon receipt of an application from a potential *Licensee*, the *Administrator* shall review and respond within thirty (30) days of receipt of the application. The *Administrator's* response shall acknowledge receipt of the application and any documents that accompany it, including the required quality manual, and shall indicate whether additional information is required. After review and approval of the applicant's documents, an initial announced audit shall be scheduled by the *Administrator*. The *Administrator* shall conduct the initial, announced audit of the *Licensee's* manufacturing facility within ninety (90) days after receiving a satisfactory application and shall verify that the quality control program in use at the manufacturing facility is the same as is represented by the *approved* quality manual.

A6.2 Certification

The *Administrator* shall execute a License Agreement with *Association* members which will authorize use of the *Certification Label*, provided the manufacturer continues to demonstrate compliance with the *program requirements*. Compliance shall be verified by the *Administrator* by conducting manufacturing facility audits, described in Section A6.4, to validate *Licensee's certification*. The *Administrator* shall control the use of the *Association's Certification Labels* and shall maintain a *Certified Production Facilities List* on the *Administrator's* website.

A6.3 Notification

The *Administrator* shall *notify Licensees,* in writing, concerning audit results and any required *Corrective Actions*. The *Administrator* shall *notify Licensees* within thirty (30) days of any changes proposed by the *Compliance Committee and approved by the Board of Directors,* to the *C3 Program. The notification shall include the dates enforcement will become effective.*

A6.4 Audits

The initial facility audit will be an announced audit while future audits will be unannounced. Subsequent audits will be conducted regularly by the *Auditor* based on the schedule for Audits outlined below The *Auditor* shall ensure that each facility has calibrated measuring devices and

certified calibration standards and maintains records of confirmation that devices used within the facility are checked against the calibrated devices or certified calibration standards on the required frequencies. The *Auditor* shall document the calibration and obtain a copy of the calibration certification, which will be added to the official report. Audits shall be performed during regular business hours. The *Licensee* shall be responsible for providing the *Administrator* a list of normal business hours, including a schedule of all plant or facility closings and shutdowns for the *Administrator* to use in scheduling plant audits. The *Administrator* shall be notified of all emergency or unscheduled closings as soon as possible. The *Licensee* shall be liable for all expenses incurred by the *Administrator* for rescheduled audits due to emergency or unscheduled closings. The *Licensee* shall be responsible for any charges if an *Auditor* arrives for an unannounced visit when the plant or facility is closed and he has not been notified. The Licensee shall identify the *Quality Control Agent*(s) for each facility, and shall ensure that every *Quality Control Agent* has taken and passed the *SFIA Examination, C3 Quality Basics* each calendar year. Licensees are encouraged to maintain more than one *Quality Control Agent* at each facility. The *Quality Control Agent* of the *Licensee* will be responsible for working with the *Auditor* during in-facility audits. The *Licensee* shall identify at least one secondary contact in the event that the *Quality Control Agent* is not available when the *Auditor* arrives. If an audit contact is not available, the *Auditor* will work with the *Licensee's* available personnel to conduct the audit. If the audit cannot be completed, a re-audit shall be conducted. The *Quality Control Agent* or any alternate audit contact (alternates are encouraged to take the *Examination, C3 Quality Basics* to become *Quality Control Agents* for their facility) shall be familiar with all production and quality control processes at that plant and shall provide full access to all areas as requested by the *Auditor*.

Audits shall be conducted on the following schedule:

a. *Initial Facility Audit*: Within ninety (90) days of completed application on a date announced to the Licensee.
b. *Primary Audits*: Conducted unannounced twice annually following the passing of the Initial Facility Audit. The Licensee shall remain on the Primary Audit schedule until the Licensee has passed two consecutive Audits without the need for taking samples or receiving a *Notice* of Non-Compliance (NONC), at which time the Licensee will be moved to the Continuing Audit schedule. In the event that a Licensee has two (2) consecutive Audits that result in the need for samples to be taken or for which a NONC is issued the Licensee will be moved to the Remedial Audit schedule.
c. *Continuing Audits*: Conducted unannounced one (1) time annually. In the event that any Continuing Audit results in the need to take samples or an NONC, the Licensee shall return to a Primary Audit Schedule.
d. *Remedial Audits*: Conducted unannounced once per calendar quarter . The Licensee shall remain on the Remedial Audit schedule until the Licensee has passed two consecutive Audits without the need for taking samples or receiving a NONC, at which time the Licensee will be moved to the Primary Audit schedule. In the event that the Licensee fails three consecutive Remedial Audits, the Licensee's failure shall result in the issuance of a *Revocation of Compliance Certification*.

For products eligible and required for enrollment in the Program and that *Licensee* purchases from an *Independent Third Party*, the Licensee remains responsible for the products compliance. This can be accomplished in one of three ways:

1. If the third-party manufacturer is part of the SFIA Code Compliance Program and the product is labeled it will not be subject to an additional audit.
2. If the third-party manufacturer is not part of the SFIA Code Compliance Program and the product is not labeled, it is subject to audit at the *Licensee's* facility.
3. If neither option 1 nor 2 is completed the product shall NOT be labeled "SFIA."

When performing audits, the *Auditor* shall have copies of the *C3 Program*, referenced documents, the *Licensee's* quality control manual, and any other information submitted by the *Licensee* to support approval. During manufacturing facility audits, the *Auditor* shall *verify* the following:

a. That the manufacturing facility utilizes the quality control program approved by the *Administrator* for participation in the *C3 Program*.

b. That *Coil* has been adequately tested and identified with the minimum *Material Properties* necessary to produce *Certified Products*.

c. That the *Certified Products* being produced are in compliance with those approved for participation in the *C3 Program*.

d. That the *Quality Control Agent*(s) at the facility have taken and passed the *SFIA C3 Examination, C3 Quality Basics* within the previous 18 months from the date of the Audit.

e. For audits where a Licensee is required to submit product samples for testing, that one sample of each category of product (*Nonstructural Member Profiles or Equivalent Nonstructural Member, Structural Members or Proprietary Structural Members)* for which the Licensee does not produce adequate Quality Control Records shall be evaluated for compliance with Section B, Section C, Section D, and Section E of this *Compliance Program.*

f. Specimens of Nonstructural or Equivalent Nonstructural Product shall be 12" inches long, without punch-outs, to use for salt fog testing, as applicable.

A6.5 Coil Audit

The *Licensee* shall maintain records identifying the minimum *Material Properties* for all *Coils* to ensure that the minimum standards necessary to produce Code Compliant Products are met prior to the material being formed into products. Each *Coil* in any *Facility* that is available for production of a certified product shall have records available for inspection by the Auditor identifying the following *Material Properties*:

a. Yield
b. Tensile
c. Elongation
d. Coating Weight

e. Base Metal Thickness

The *Licensee* can establish the necessary *Material Properties* by providing one or more of the following *Property Certifications* for each Coil:

a. *Mill Certificates* from the producer of the *Coil*.
b. Test Results from an independent accredited testing lab.
c. Test Results from testing conducted by the Licensee on *Certified Testing Equipment* by a *qualified technician*.

The *Licensee* shall identify each *Coil* in the *Facility* with a minimum thickness consistent with the *Licensee's Quality Manual*. The Auditor shall identify two (2) Coils with minimum thickness identified for production of each of the following categories of product produced at the Facility:

a. Nonstructural Products
b. Equivalent Nonstructural Products
c. Structural Products
d. Proprietary Structural Products

The *Quality Control Agent* shall provide the *Auditor* with the *Property Certification* for each Coil identified by the *Auditor*. The *Quality Control Agent* shall provide documentation that verifies the laboratory meets the requirements of the *accredited independent laboratory*. In the event that any *Coil* in a *Facility* does not meet the minimum *Material Properties* necessary to produce *Products* that comply with the C3, the *Coil* and all associated coils related to the master coil must be physically segregated from all other *Coils* available for producing certified products and clearly labeled as *Non-Conforming*. The Auditor shall ensure that each facility maintains a designated area for *Non-Conforming Coil* and that *Non-Conforming Coils* are clearly labeled.

A6.6 Quality Control Audit

The Auditor shall randomly choose two (2) samples for each of the following categories of *Product* produced at the *Facility*:

a. Nonstructural Products
b. Equivalent Nonstructural Products
c. Structural Products
d. Proprietary Structural Products

The *Quality Control Agent* shall provide the *Auditor* with the *Licensee's Quality Control Records* for the chosen samples that show the product dimensions have been measured and confirmed to meet the minimum and maximum limits in Section C, and that the material can be traced from the marking on the product sample to a *Coil* with *Property Certification* adequate to satisfy Section A6.5, above. The *Quality Control Agent* or another agent of the *Licensee* designated by the *Quality Control Agent* shall demonstrate to the *Auditor* the ability to measure the dimensions of each category of product produced at the facility (a., b., c. and d. above in this paragraph) and to check the dimensions against the minimum and maximum limits in *Licensee's Quality Control Manual* and this *C3 program*.

The Auditor shall also evaluate the sample *Products* for compliance with Section D.

A6.7 Testing

A6.7.1: Coil Testing

a. Base Steel Thickness – The samples shall be evaluated for compliance with Section B1.2. The coating shall be removed from the samples as specified in ASTM A90/A90M.

b. Mechanical Properties – The samples shall be evaluated for compliance with Section B1.1. The materials shall be verified for the properties listed in the approved drawing and quality control manual. Testing for mechanical properties shall be in accordance with ASTM A370.

c. Coatings – The samples shall be evaluated for compliance with Section B2. Standard zinc/zinc alloy coatings shall be evaluated by weight following the procedures specified in ASTM A90/A90M. Standard aluminum/aluminum alloy coatings shall be evaluated by weight following the procedures specified in ASTMA428/A428M. *Equivalent Coatings* shall be evaluated by performance following the procedure specified in ASTM B117 and Section B2 of this program. If a *Nonstructural Member* fails the coating weight test, the Administrator shall notify the manufacturer of the failure. The manufacturer has three (3) business days after receipt of notice to request the optional Equivalent Coating test or they must accept the failure NONC per A6.10.d.

A6.7.2 Remedial Testing

In the event that the Licensee cannot produce complete and adequate *Property Certification* for any *Coil* or *Product* sample selected by the *Auditor*, or if the Licensee cannot provide complete and adequate *Quality Control Records* for any *Product* sample chosen by the *Auditor*, the Licensee shall provide a physical sample for independent quality control testing. The Licensee shall provide a sample from each *Coil* or *Product* selected by the auditor under Sections A6.5 or A6.6 for which the auditor determines there is inadequate or incomplete *Property Certification* or *Quality Control Records*. The *Auditor* shall appropriately mark the samples requiring independent testing so the Auditor can identify origin and verify that the samples are prepared for testing without alteration as set forth in this section. The *Licensee* shall package the selected samples for shipment to the accredited laboratory. The *Auditor* shall witness the packaging, and the *Auditor* shall ship the samples. Samples shall be shipped to and tested at the IAS accredited independent laboratory designated by the *Administrator*. The *Licensee* shall be liable for all expenses incurred for quality control testing in conjunction with the audits. Samples selected for the *Administrator's* evaluation shall be selected from the samples of finished *nonstructural product, equivalent nonstructural*,

structural product, and/or proprietary structural. Tests shall be conducted on samples selected during the audit and returned to the *Administrator* for evaluation of all of the properties listed in A6.7.1.

a. Product Shape – The samples shall be evaluated for compliance with Section C at the facility by the *Auditor* and provide pass or fail results.

b. Marking – *Products* manufactured at the *Licensee*'s facility, including *products* from which the samples were taken, shall be evaluated for compliance with Section D.

A6.8 Reporting

The *Administrator* shall submit a comprehensive report of the *Auditor's* findings to the *Licensee* following each audit of the *Licensee's* manufacturing facilities. All findings of the *Auditor* shall be discussed with the audit contact or company representative at the time of the on-site audit. *The Auditor* shall leave behind a copy of written, signed notes about the audit. The *Administrator* shall issue an audit report which contains all official comments and decisions with respect to compliance or non-compliance with the *C3 Program*. The report shall outline any matters requiring clarification or corrective action, or any other required action on the part of the *Licensee*, with deadlines for response. The *Auditor*'s report detailing the manufacturing facility's audit results shall be considered confidential and shall be issued to the *Licensee's* designated representative through the *Administrator*'s office. Retention of tests results by the Administrator will conform to the SFIA Record Retention policy.

At the same time as submission to the *Licensee,* the *Administrator* shall submit a confidential copy of the report to the *Association*'s Technical Director. The Technical Director shall have the authority to over-ride test reports, provided by the *Administrator*, when the results are clearly an entry error, technical discrepancy, or process failure by the *Administrator*. The Technical Director shall report any proposed over-ride to the Compliance Committee. If the Compliance Committee does not agree with a specific action by the Technical Director, the results of the report would stand.

The *Administrator* shall prepare reports about the status of the *Compliance Program* as requested by the *Compliance Committee or Board of Directors*.

A.6.9 Notice of Deficiencies

As a result of an audit, any issue(s) of non-compliance with the *program requirements* shall result in the issuance of a *Notice of Deficiencies* as part of the audit report. *Licensees* are required to respond to all *Notice of Deficiencies* within the time frame stipulated in the audit report. Examples of deficiencies may include but are not limited to the following:

a. Discrepancies and/or inconsistencies between the approved quality control manual and the actual practices observed by the *Auditor* that do not affect *Certified Product* compliance with the program performance requirements.

b. Lack of records that trace finished goods back to the master coil used in their manufacture.

c. Lack of records for *Coil* containing the required *Material Properties, if samples receive passing results*.

d. Lack of *Quality Control Records* for the samples chosen by the *Auditor*.

e. Improper use of *Certification Labels.*

f. Illegible *markings*.

g. Disregard of *marking* requirements (e.g.: not including all of the required items, such as not including manufacturer's identification or product's minimum thickness).

h. Extensive lapse in *marking* requirements.

i. Dimensional failures of products

Unresolved *Notice of Deficiencies* will result in issuance of a *Notice of Non-Compliance* in accordance with Section A6.11.

A6.10 Certification of Compliance

The *Administrator* shall be responsible for *Compliance Certification*. *Compliance Certification* shall be based upon receipt from a potential *Licensee* of an approved quality manual, submission to the initial manufacturing facility audit, and other specifications necessary to demonstrate compliance with the *Program Requirements.* When the *Administrator* determines that the *Program Requirements* have been satisfied, he shall issue a *Compliance Certification* and add the manufacturer's facility to the *Production Facilities List*. The *Compliance Certification* shall include the certification date, *Licensee's* name, facility location, and list of products that have been certified. and the *Compliance Certification* shall be sent to the *Licensee* and to the *Association*. The *Licensee,* upon receipt of a *Compliance Certification*, is permitted to use the *Certification Label* as approved in writing by the *Administrator* (see Section entitled *Certification Labels*).

When a *Code Compliance Certification Authorization* is issued to a *Licensee*, the *Licensee* is included on the *Certified Production Facilities List* which is accessible via the Internet or the *Administrator's* website. The *Certified Production Facilities List* shall contain the following information: the *Licensee's* name, facility address, and list of products that have been certified, and contact information. Hyperlinks to the *Licensee's* website may also be included at the *Licensee's* option. Maintenance of the *Certified Production Facilities List* shall be the responsibility of the *Administrator*.

A6.11 Notice of Failure

The *Licensee* shall be sent a *notification* of failure if the initial application or initial manufacturing facility audit does not demonstrate compliance with all the *Program Requirements.* The

notification shall be sent via next day delivery service or electronic notification with receipt confirmation. The *notice* of failure shall include the *Licensee's* name, facility location and the reason the applicant did not qualify under the *Program Requirements. A* list of corrective actions that are required shall also be included.

A6.12 Noncompliance

A *Notice* of Non-Compliance (NONC) with the *Program Requirements* shall be issued to the *Licensee* by the *Administrator* when issues of non-compliance exist. Examples of issues of non-compliance may include, but are not necessarily limited to, the following:

a. Failure to respond satisfactorily within 30 days of receipt of the *Notice of Deficiencies* resulting from an audit report.

b. Failure to respond with an itemized action plan to satisfy the *Notice of Deficiencies*.

c. Failure to meet the *Program Requirements* for audit samples of *Structural or Proprietary Structural Products* with respect to yield, tensile, elongation, coating and/or thickness.

d. Failure to meet the *Program Requirements* for audit samples of Nonstructural or *Equivalent Nonstructural* Products with respect to yield, coating, and/or thickness.

e. Failure to have product available for inspection and sampling for an Auditor when requested during an audit.

g. Failure to permit *Auditor* to enter manufacturing facility and conduct an audit within 15 minutes of arrival.

h. Failure to maintain and supply necessary records of Material Properties or Quality Control records.

The Notice of Non-Compliance issued to the Licensee by the Administrator shall state the reason(s) for issuance of the Notice of Non-Compliance, the required action(s) that must be taken by the Licensee to correct the items found not to be in compliance, instructions for responding to the Administrator, and a time frame within which an action plan addressing each item of noncompliance must be received by the Administrator in order to avoid the issuance of a Revocation of Compliance Certification.

A6.13 Licensee's Response

Licensee shall be given a period of 30 days from the date of receipt of the audit report to address the Action Items in the *Notice of Deficiencies* to the satisfaction of the *Administrator*.

The *Licensee* shall be required to respond within 10 days of receipt of a *Notice of Non-Compliance* with an action plan that outlines a proposal to resolve the non-compliance issue(s). The *Administrator* shall either accept the action plan or work with the *Licensee* to revise the plan to his satisfaction. Following approval of the action plan by the *Administrator*, the *Licensee* shall have 30 days from receipt of approval to implement the plan. If Licensee provides the Administrator with an unaffiliated third-party certification (*mill certification* or certification from an accredited independent laboratory) that the Administrator can verify through traceability that conflicts with the Administrator's results, this *Notice of Non-Compliance* will not count towards Revocation of Compliance Certification. Nonetheless, the *Licensee* shall respond with an action plan as required

above and the *Administrator* shall conduct audits per the prior audit schedule after implementation of the plan to verify compliance. Remedial Audits will only take samples as necessary for failure to provide the required documentation of Material Properties or Quality Control records.

If there is a subsequent failure on the follow-up audit for any reason, the failure will count as one *Notice of Non-Compliance*. To clarify, the NONC issued for the failure to maintain and supply necessary records of Material Properties or Quality Control records shall cover the sample failure. A second NONC will not be issued for the sample failure. If the sample receives passing results, the NONC issued shall become a variance.

A6.14 Revocation of Compliance Certification

A manufacturing facility shall be removed from the *Production Facilities List* maintained by the *Administrator* when a *Revocation of Compliance Certification* is issued. The following shall be cause for a *Revocation of Compliance Certification* to be issued:

a. Failure of the *Licensee* to respond with an action plan to a, *Notice of Deficiencies* or a *Notice of Non-Compliance* after an unannounced audit.

b. Failure to implement an approved action plan once it has been submitted and approved by the *Administrator*.

c. Issuance of a *Notice of Non-Compliance*, including a non-compliance following a follow-up audit on three separate occasions within any rolling twelve-month period.

Examples are on the next page.

There are three distinct NONCs:
1. General
2. Standard and Proprietary Structural
3. Standard and Equivalent Nonstructural

Date *	Process **
1/1/2025	**Initial Inspection; testing documentation provided in traceability - no additional testing required**
1/14/2025	**Compliance Certification issued for class of products inspected**
8/14/2025	**Follow up inspection; testing documentation provided in traceability - no additional testing required**
2026	Move to Continuing Audits (annual) due to compliance in 2025

Date *	Process **
1/1/2025	**Initial inspection; testing documentation with traceability was not adequate - missing info; samples selected for testing**
1/20/2025	Letter of Results (LOR) with no failures
1/20/2025	**Compliance Certification issued for class of products inspected**
9/6/2025	**Follow up inspection; NONC issued traceability was not adequate - missing info; samples selected for testing (1st General NONC)**
9/20/2025	Letter of Results (LOR) with no failures
2026	Continue with Primary Audits (bi-annual) due to noncompliance with traceability in 2025
3/11/2026	Follow up inspection; testing documentation provided in traceability - no additional testing required
9/29/2026	Follow up inspection; testing documentation provided in traceability - no additional testing required
2027	Move to Continuing Audits (annual) due to compliance in 2026

Date *	Process **
1/1/2025	**Initial inspection; NONC issued traceability was not adequate - missing info; samples selected for testing**
1/20/2025	Letter of Results (LOR) with failures
1/20/2025	**Compliance Certification issued for class of products inspected that passed testing**
3/6/2025	**Resampling of class of product that failed**
3/20/2025	Letter of Results (LOR) with no failures
3/20/2025	**Compliance Certification issued for class of product inspected that passed testing**
9/7/2025	**Follow up inspection; NONC issued traceability was not adequate - missing info; samples selected for testing (1st General NONC)**
9/14/2025	Letter of Results (LOR) with failures **(General NONC covers failures)**
11/3/2025	**Resampling of class of product that failed**
11/10/2025	Letter of Results (LOR) with no failures
2026	Move to Remedial Audits (quarterly) due to noncompliance with traceability and product failures in 2025
3/11/2026	Follow up inspection; NONC issued traceability was not adequate - missing info; samples selected for testing **(2nd General NONC)**
3/18/2026	Letter of Results (LOR) with no failures
6/9/2026	Follow up inspection; testing documentation provided in traceability - no additional testing required
9/29/2026	Follow up inspection; testing documentation provided in traceability - no additional testing required
2027	Move to Primary Audits (bi-annual) due to compliance in 2026
1/12/2027	Follow up inspection; testing documentation provided in traceability - no additional testing required
7/21/2027	Follow up inspection; testing documentation provided in traceability - no additional testing required
2028	Move to Continuing Audits (annual) due to compliance in 2027

* Dates in example are estimates only, actual dates will vary.
** Process timeline does not include the required correction response process for clarity.

Note: The General NONC can be added as the 3rd NONC for the class of product that has 2 NONCs; however, structural cannot be added to nonstructural or vice versa.

A *Revocation of Compliance Certification* issued for a specific manufacturing facility shall affect only that facility and shall not impact the status of other manufacturing facilities operated by the same *Licensee.* Upon receipt of a *Revocation of Compliance Certification* at a facility, the *Licensee* shall immediately:

a. Discontinue use of *Certification Labels* for all classes of products.

b. Cease all references to participation in the *Compliance Program* for all classes of *products* from that facility.

c. Remove all *Certification Labels* from the affected *products* within the *Licensee's* possession.

d. Label the Revoked classes of products as "Not SFIA Compliant." Label must be in the same size and font as other labeling on similar products.

Continued use of labels after *Revocation of Compliance Certification* or false claims of certification will result in suspension/termination of the *Licensee's Association* membership.

A *Revocation of Compliance Certification* for *products* produced at a particular facility only applies to that particular facility and all classes of product. The *Licensees'* other facilities that produce the same *product* may continue to market *Certified Products* produced at those facilities not listed in the *Administrator's Notice of Revocation of Compliance Certification*. However, when doing so, *Licensees* shall market such *Certified Products* in such a way that they do not cause confusion or deception to consumers, distributors or others. A new *Notice* of *Compliance Certification* may be applied for as soon as required *Corrective Actions* have been taken to remedy any action items in the *Notice of Revocation of Compliance Certification*. Once the application is received by the *Administrator,* an unannounced audit will be conducted within 30 days, to verify that *Corrective Actions* have sufficiently addressed issue(s) of *non-compliance*. *Certification Labels* are not allowed to be used until a new *Compliance Certification* is issued. The *Licensee* may appeal a *Revocation of Compliance Certification* to the *Compliance Committee*.

A6.15 Certification Label

The official *Certification Label* must be used by *Licensees* to identify all *Certified Products*. It may also be used on product literature to identify *Certified Products*. The *Administrator* shall have sole authority to authorize use of *Certification Labels* on *products* or literature.

By applying *Certification Labels*, the *Licensee* is certifying that the *products* bearing the label comply with the *Program Requirements* and have been manufactured as good-faith reproductions of *Products* listed on the *Certified Production Facilities* link of the *Association* website in design, construction and fabrication.

Only *Certification Labels* developed and approved by the *Compliance Committee* in conjunction with the *Administrator* may be applied. *Certification labels* are to be ordered from the printer identified by the *Association*, and the *Licensee* must submit a copy of the *Compliance Certificate* with the order. *Certification Labels* shall be applied to the bulk packaging at the time and place of manufacture and may be added to the marking required by AISI for all members. The *Certification Label* may not be modified by the *Licensee* without written consent from the *Compliance Committee*. The *Certification Label* may not be used or placed in such a manner as to imply any

other endorsements or certifications by the *Association* or the *Administrator*. Only *products* approved for certification shall be permitted to have *Certification Labels* applied to them.

A6.16 Communications

When changes to the referenced standards take place and are adopted into the *Compliance Program,* the *Administrator* shall notify *Licensees* in writing. *Notification* shall include instructions detailing the process required to maintain *certification* approval based upon use of those updated standards and the timeline for enforcement to commence.

A6.17 Questions

Questions about the *Compliance Program* or applicability of specific sections of the program shall be addressed to the *Administrator*. If the *Compliance Program* is not clear on the issue, the *Administrator* or the *Licensee* may refer the matter in writing to the *Compliance Committee* for a written interpretation.

A7 Membership

A manufacturer is required to sign License Agreements with the *Association* and the *Administrator* in order to participate in the *C3 Program*. The manufacturer agrees to abide by the *Program Requirements* as set forth in these *Program Requirements* and other referenced *Program* documents. The License Agreements shall automatically renew annually provided that the *Licensee* continues to comply with the *Program Requirements* as set forth in these *Program Requirements* and continues to pay all applicable fees. Failure to comply with the *Program Requirements* shall constitute a breach of the License Agreements, and may result in *Revocation of Compliance Certification.*

A8 Licensee Roles and Responsibilities

The participating *Licensee* is a manufacturer of *product* who certifies that *Certified Products* included in the *C3 Program* comply with the *Program Requirements*. The *Licensee* shall have the following duties and responsibilities:

a. Continuously manufacture *Certified Products* in compliance with those tested for inclusion in the *C3 Program*.

b. Maintain an adequate quality control program or programs to ensure that *Certified* structural, proprietary structural, nonstructural, and/or equivalent nonstructural cold-formed steel framing *Products* are manufactured in accordance with the *Program Requirements*. (Minimum quality control requirements for participation in this *Program* are specified in Section A11.)

c. Provide the *Administrator* with an annual schedule of plant or facility closings and *notify* the *Administrator* of any changes when they occur.

d. *Notify* the *Administrator* immediately of any changes in location, addition or deletion of plants or facilities that manufacture or assemble *Certified Products*.

e. Permit free access during normal working hours for the *Administrator's Auditor*, within 15 minutes of his arrival at the facility, and allow him access into the manufacturing areas, warehouse areas, material storage facility areas, and provide the *Administrator's Auditor* with any requested quality control records that validate the certification process.

f. Provide a Quality Control Agent and secondary audit contact (who is encouraged to also be tested and qualified as a Quality Control Agent) at each manufacturing plant or facility who will be available to accompany the *Auditor* throughout the audit process and has the authority to sign the appropriate audit form.

g. Address all *Notice of Deficiencies* assigned as a result of the audit process and document *Corrective Actions,* in writing, to the *Administrator* within the prescribed timeframe.

h. Apply Certification Labels only as authorized by the C3 Program.

i. Comply with all marking and labeling requirements.

j. Pay all applicable fees due to the Associations or the Administrator, and other costs as described in the underlying Agreement or in the *C3 Program*. Failure to pay fees on a timely basis shall subject *Licensee* to *Revocation of Compliance Certification* or exclusion from the *C3 Program*.

A8.1 Literature and Technical Data

Manufacturers shall submit to the *Administrator* the following technical data, certified by a professional engineer, in accordance with the *Applicable Standards* for the *Administrator's verification.* The manufacturer shall make available the certified data to the *Administrator* for products that are not listed in the Technical Guide.

Note: If the products are not within the limits of Section A5 of AISI S240 and AISI S220 they are not standard products.

A8.1.1 *Structural Members and Proprietary Structural Members*

a. Physical Properties Data conforming to the requirements of AC46; including properties per AISI or from Testing to cover web crippling or section reductions.
b. Members intended to be used for curtain wall framing shall submit; Non-Composite Wall Limiting Heights based upon the stud being fully braced laterally and torsionally, containing data for all the combinations of the following criteria. The maximum brace length to restrain lateral-torsional buckling (Lu) shall be shown next to each *product* in the table.
    I. Deflection Limits: L/240, L/360, L/600
    II. Lateral Loads: 15, 20, 25 and 30 psf
    III. Spacing: 12", 16", 24" on-center spacing
c. Members intended to be used for curtain wall framing shall submit; Non-Composite Wall Limiting Heights based upon the stud being braced at 48 inches on-center (vertically), laterally and torsionally, containing data for all the combinations of the following criteria:
    I. Deflection Limits: L/240, L/360, L/600
    II. Lateral Loads: 15, 20, 25 and 30 psf
    III. Spacing: 12", 16", 24" on-center spacing
d. Members intended to be used for axial load-bearing framing shall submit; Axial capacity tables based on stud bracing at 48" on-center (vertically) laterally and torsionally. Containing data for all the combinations of the following criteria:
    I. Deflection Limits: L/240, L/360, L/600
    II. Lateral Loads: 15, 20, 25 and 30 psf

III. Spacing: 12”, 16”, 24” on-center spacing
IV. Heights of 8,9,10,12,14 and 16 feet

e. Members intended to be used for floor joist framing shall submit; Allowable span tables based on joist bridging of 96” on-center along the length of the tension flange and continuous bracing of the compression flange. Span tables shall contain data for all the combinations of the following criteria: Spacing of 12”, 16” & 24” on center.
   I. Live load deflection limits of L/360 and L/480.
   II. Load combinations of dead load / live load of:
      i. 10 psf / 20 psf
      ii. 10 psf / 30 psf
      iii. 10 psf / 40 psf
      iv. 10 psf / 50 psf
      v. 15 psf / 125 psf
      vi. 40 psf / 125 psf

f. Proprietary Structural Members intended to be truss members:

   I. Physical Properties Data conforming to the requirements of AC46; including properties per AISI or from Testing to cover web crippling or section reductions; as well as fully dimensioned section drawings.

   II. Allowable unbraced axial loads per member for length up to and including the expected unbraced lengths used in the fabrication of trusses, with data provided for member lengths of 2’, 4’ and 6’ at a minimum.

g. Testing required for proprietary structural members:
   I. Where unable to be analyzed in accordance with AISI S100 or S240, framing member conditions such as modified ends, non-standard punchouts, flange reductions, indentations or other modifications to the framing member along the length of its axis shall be tested for capacity.
   II. Tests shall be per appendix B of this document, the AISI S900 series standards, or code referenced ASTM test standards as applicable.
   III. Where no applicable test standard exists, the test method shall be as agreed upon between the enrollee, the plan Administrator, and SFIA Technical Director.

A8.1.2 *Nonstructural Members and Equivalent Nonstructural Members*

a. Physical Properties Data conforming to the requirements of AC46; including properties per AISI or from Testing to cover web crippling or section reductions.
b. Screw capacities for *equivalent nonstructural member* material containing allowable values for shear (bearing), pullout and pullover in accordance with AISI S100, Section E4.
c. Non-Composite Wall Limiting Heights based upon the stud being fully braced laterally and torsionally, containing data for all the combinations of the following criteria. The maximum brace length to restrain lateral-torsional buckling (Lu) shall be shown next to each *product* in the table.
   I. Deflection Limits: L/120, L/240, L/360
   II. Lateral Loads: 5, 7.5, 10 psf

III. Spacing: 12”, 16”, 24” on-center spacing

d. Non-Composite Wall Limiting Heights based upon the stud being braced at 48 inches on-center (vertically), laterally and torsionally, containing data for all the combinations of the following criteria:
   I. Deflection Limits: L/120, L/240, L/360
   II. Lateral Loads: 5, 7.5, 10 psf
   III. Spacing: 12”, 16”, 24” on-center spacing
e. Composite Limiting Heights calculated and tested as described in Appendix C, meeting the requirements of AC86 or AISI S916, and published with data for all the combinations of the following criteria:
   I. Deflection Limits: L/120, L/240, L/360
   II. Lateral Loads: 5, 7.5, 10 psf
   III. Spacing: 12”, 16”, 24” on-center spacing

Where the member has zero span or is not recommended for an application, an ellipse shall be shown in the space.

A8.2 Other Marketing

Licensees may use the *Certification Label* in marketing when it appears to directly relate to references to this *C3 Program*. The use of the *Certification Label* may only be used on pages where all *products* represented on that page are *Certified*. Wherever the *C3 Program* is used or referenced in marketing, the *Licensee* shall include the statement “Check the updated list of *Certified Production Facilities* at [*Administrator’s*] website at https://www.archtest.com/certification/SFIA_SteelFraming_Intertek.aspx.” *Licensees* may not use *Certification Labels* until all appropriate agreements between the manufacturer, the *Association* and the *Administrator* are executed, and the *products* are qualified under this *Program* and a *Compliance Certification* has been issued. Appropriate clarifications, highlights, footnotes, etc. must be included to ensure clarity about which products are qualified under the *Compliance Program* and which are not.

No *Licensee* shall be permitted to use *Certification Labels* in future literature if it has received a *Revocation of Compliance Certification* and has not had all relevant facilities re-certified. The *Certification Label* shall not be used to indicate that the *Association* or the *Administrator* in any way endorses the *Licensee* or its *Certified Products.*

Licensees that leave the *Association* or the *Program* shall immediately destroy all *Certification Labels* and remove or destroy any literature, signage or emblems that imply participation in the *Program* or membership in the *Association*.

The *Administrator* shall be responsible to review all *Product* literature and *product* websites of each *Licensee* twice a year to verify compliance with the *Program Requirements*.

A8.3 Similar Products

It is the intent of this program that all C-shape products must be enrolled in the program and carry the SFIA label. Custom Products and products not enrolled may not bear the SFIA label.

A9 Compliance Committee

A9.1 Role and Responsibility

The *Association's Compliance Committee* shall have the responsibility for the maintenance and oversight of the *C3 Program*, including but not limited to the following duties:

a. Contract with the *Administrator* and periodic review of the *Administrator's* performance.

b. Monitor the *Administrator's* records.

c. Formulate general policy to ensure the uniformity and equity of the *Compliance Program's* administration.

d. Monitor all *Applicable Building Codes* and *Applicable Standards*, and update the *C3 Program* as deemed necessary.

The SFIA Technical Director shall instruct the Administrator on how to implement this program, clarify and answer Administrators questions. The SFIA Technical Director shall be the liaison between the Compliance Committee and the Administrator.

The *Compliance Committee* shall receive bi-annual reports from the *Administrator* about the status of the *C3 Program, including new Licensees.* All reports from the *Administrator* are to be aggregated and generic to protect the confidentiality of the *Licensee*, except where required to rule on an appeal. The *Compliance Committee* shall respond to requests for technical interpretations posed by the *Administrator* or *Licensees*. The *Compliance Committee* shall review appeals from *Licensees* relative to the *Program Requirements* or *Administrator's* decisions.

A9.2 Revisions to Standards

The *Compliance Committee* shall stay apprised of changes to building codes and standards. The *Compliance Committee* will implement changes to this Program as deemed appropriate.

A9.3 Review of Appeals

The *Administrator* is responsible for the execution of the functions described in these *Program Requirements*. However, any *Licensee* may appeal *Revocation of Compliance Certification* decisions made by the *Administrator* by sending a written appeal to the *Compliance Committee* Chairperson*,* and sending the *Administrator* a copy within 30 days of receipt of written Notice of *Revocation of Compliance Certification.* The appeal shall state the reason(s) that the *Licensee* is seeking review of the *Administrator's* determination.

The *Licensee's* written appeal shall contain sufficient information and/or documentation to accurately identify the factual background, the nature of the dispute and the decision or desired outcome sought. The *Administrator* shall submit materials to the *Compliance Committee* supporting his determination within 10 days of the *Licensee's* appeal.

The *Compliance Committee* shall rule on the appeal within fourteen (14) days of receiving the *Licensee's* appeal and the *Administrator's* materials. In its review of the *Licensee's* appeal, the

Compliance Committee shall consider input from the appealing *Licensee* and the *Administrator*, and may seek and consider input from the *Association's* technical staff and legal counsel. Input may also be requested from other qualified individuals or organizations with pertinent laboratory, technical or industry experience.

During the appeal process, the *Licensee* may not use *Certification Labels* on the Revoked class of *products*. Any Revoked products produced shall be labeled "Not SFIA Compliant" with a font type and size similar to other labeling. If the *Administrator's* decision is sustained by the *Compliance Committee*, *Revocation of Compliance Certification* shall continue as per Section A6.9.

A10 Communications

The *Licensee* and the *Administrator* shall not make any public comments, including statements at *Association* meetings, on the status of any particular *Product* or *Licensee* except to refer all inquiries to the *Certified Manufacturing Facilities List*. The *Association, Licensee* and the *Administrator* are obliged to maintain the confidentiality of proprietary information received from participating companies. This obligation is detailed in the formal agreement between the *Association* and the *Administrator*, and in the individual agreements between the *Licensee, Administrator and Association.* The *Administrator* shall maintain the *Certified Manufacturing Facilities List* on its servers. The servers shall be accessible through a seamless link from the SFIA website.

A11 Quality Documentation

All *Licensees* are required to submit a quality control manual to the *Administrator* *and updated annually*. The quality control manual must document how the *Licensee's* quality control program and procedures meet the requirements of Appendix D and applicable sections of AC46. The prospective *Licensee* shall forward a copy of the quality control manual to the *Administrator* before the *Program* applicant is approved as a *Licensee*. Quality control manuals shall include manufacturer's *Approved Part Drawings for each product.* Each of the *Licensee's* manufacturing facilities capable of producing *products* shall have on file a physical copy of the quality manual, referenced documents and the *Compliance Program*.

B. Materials

B1 Sheet Steel Properties

B1.1 Mechanical Properties

B1.1.1 Structural Members and Proprietary Structural Members shall be cold-formed to shape from sheet steel with mechanical properties complying with ASTM A1003/A1003M but be limited to the following material types and *grades:*

Structural and Proprietary Structural members:

1. ASTM A1003/A1003M Type H (high ductility): Structural Grade 33 [230] Type H (ST33H) [ST230H] or Structural Grade 50 [340] Type H (STH) [ST340H]

B1.1.2 Nonstructural members and Equivalent Nonstructural Members shall be cold-formed to shape from sheet steel with mechanical properties complying with ASTM A1003/ A1003M, but be limited to the following material types and *grades:*

Nonstructural members

1. Type NS (nonstructural): Nonstructural Grade 33 [230] (NS33) [NS230] or Nonstructural Grade 40 [275] (NS40) [NS275] or Nonstructural Grade 50 [340] (NS50) [NS340] or Nonstructural Grade 57 [395] (NS57) [NS395] or Nonstructural Grade 60 [410] (NS60) [NS410] or Nonstructural Grade 65 [450] (NS65) [NS450] or Nonstructural Grade 70 [480] (NS70) [NS480] or Nonstructural Grade 80 [550] (NS80) [NS550].

B1.2 Thickness

B1.2.1 Structural and Proprietary Structural Members:

1. *Structural and Proprietary Structural Members* shall have a minimum *base steel thickness* that is equal to or greater than the associated thickness values listed in Table 1 (below).
2. In no case shall a member have a minimum *base steel thickness* less than 95% of the *design thickness*.

Table 1 - Thickness for Standard Structural Members

Designation Thickness	Minimum Base Steel Thickness		Design Thickness	
	(inch)	(mm)	(inch)	(mm)
33	0.0329	0.836	0.0346	0.874
43	0.0428	1.087	0.0451	1.146
54	0.0538	1.367	0.0566	1.435
68	0.0677	1.720	0.0713	1.811
97	0.0966	2.454	0.1017	2.583
118	0.1180	2.997	0.1242	3.155

B1.2.2 Nonstructural Members:

B1.2.2.1 Standard Nonstructural Members:

1. *Standard Nonstructural Members* shall comply with AISI S220 and shall in no case have a minimum *base steel thickness* less than 95% of the *design thickness*.

2. *Standard Nonstructural Members* shall have a minimum *base steel thickness* that is equal to or greater than the associated thickness values listed in Table 2 (below).

Table 2 - Thickness for Standard Nonstructural Members

Designation Thickness	Minimum Base Steel Thickness		Design Thickness	
	(inch)	(mm)	(inch)	(mm)
18	0.0179	0.455	0.0188	0.478
27	0.0269	0.683	0.0283	0.719
30	0.0296	0.752	0.0312	0.792
33	0.0329	0.836	0.0346	0.874

B1.2.2.2 Equivalent Nonstructural Members:

1. *Equivalent Nonstructural Members* shall comply with AISI S220 and shall in no case have a minimum *base steel thickness* less than 95% of the *design thickness*.

2. *Equivalent Nonstructural Members* shall have a minimum *base steel thickness* that is equal to or greater than the thickness specified on the *Approved Part Drawing.*

3. Equivalent Nonstructural Members shall meet the performance requirements of the Building Code and this *C3 Program.*

B2 Corrosion Protection

1. *Structural and Proprietary Structural Members* shall have a minimum *standard coating* that complies with the requirements of AISI S240, Table A4.1, reproduced below.

Table A4-1
Coating Designations

Coating Classification	Coating Designator	Minimum Coating Requirements			
		Zinc Coated [A] oz/ft^2 (g/m^2)	Zinc Iron [B] oz/ft^2 (g/m^2)	55% Al-Zinc [C] oz/ft^2 (g/m^2)	Zinc-5% [D] oz/ft^2 (g/m^2)
Metallic Coated	CP 60	G60 [Z180]	A60 [ZF180]	AZ50 [AZM150]	GF30 [ZGF90]
	CP 90	G90 [Z275]	Not Applicable	AZ50 [AZM150]	GF45 [ZGF135]
Painted Metallic	PM	The metallic coated substrate shall meet the requirements of metallic coated. In addition, the paint film shall have a minimum thickness of 0.5 mil per side (primer plus topcoat) with a minimum primer thickness of 0.1 mil per side. [E]			

[A] Zinc-coated steel sheet as described in ASTM A653/A653M.
[B] Zinc-iron alloy-coated steel sheet as described in ASTM A653/A653M.
[C] 55% Aluminum-zinc alloy-coated steel sheet as described in ASTM A792/A792M.
[D] Zinc-5% aluminum alloy-coated steel sheet as described in ASTM A875/A875M.
[E] In accordance with the requirements of ASTM A1003/A1003M.

2. *Nonstructural Members* shall have a minimum *standard coating* that complies with the requirements of Table 3, Type NS (below).
3. *Nonstructural Members* may have an *Equivalent Coating* in lieu of a *Standard Coating*, and may be used without pre-approval but shall be evaluated by performance following the procedure specified in ASTM B117 and the requirements defined in this program for *Equivalent Coating*.
4. Samples of nonstandard coatings, metallic Type NS, shall be tested side-by-side via the ASTM B117 test procedure with a *certified minimum* (single side) *G40 sample* to establish equivalence. Three certified G40 samples, 4" x 12" size, are to be placed in salt fog chamber for each testing round.
   All samples (certified G40 and test samples) shall be scribed prior to testing. Insert the *certified G40 sample* and alternative coating sample into the B117 test chamber, the testing will run 3 days (72 hours) then checked every 12 hours until *certified G40 sample* has 10% rust, or if after 144 hours, the presence of rust doesn't reach 10%, the test may be stopped. In comparing the alternative sample to the *certified G40 sample*, it must have same or less % of rust than the G40 sample to pass. The alternative sample shall be compared to the new ratioed percentage of rust.
   *** For certified G40 samples that are coated on the test side with a weight of more than 0.12 oz of zinc, the allowable level of red rust on the alternative coating will be ratioed up by the following: [(measured coating thickness)/0.12] x % red rust measured on the *certified G40 sample*.

5. If a nonstructural *Coil* or *Product* is selected during an inspection that contains a coating not listed in the *Program*, the *product* shall be tested as an *Equivalent Coating*. However, if the manufacturer would like their nonstandard coating to be added to the list of standard coatings within this program, independent third-party testing would need to be submitted to the Compliance Committee for review and approval.

TABLE 3 Nonstructural Coating Weight [Mass] Requirements (Metallic Coatings)

Product Designation	Coating Designator	Coating Designation			
Type NS	CP40*	G40 [Z120][A]	AZ50 [AZM150][B]	GF20[ZGF60][C]	T1–25 [T1M 75][D]
		T2–100 [T2M 300][D]	20Z/20Z [60G/60G][E]	ZM20 [ZMM60][F]	

Note: CP40 Coating Designator cannot be used for Proprietary/Equivalent Coatings

[A] Zinc-coated steel sheet as described in Specifications A653/A653M, A1063/A1063M.
[B] 55 % aluminum-zinc alloy-coated as described in Specification A792/A792M.
[C] Zinc-5 % aluminum alloy-coated steel sheet as described in Specification A875/A875M.
[D] Aluminum-coated Type 1 and Type 2 steel sheet as described in Specification A463/A463M.
[E] Zinc-coated steel sheet as described in Specification A879/A879M.
[F] Zinc-aluminum-magnesium alloy-coated as described in Specification A1046/A1046M.

C. Product Shape

C1 Dimensions

C.1.1 – Standard C – Shapes

a. *Structural Members* shall have any combination of the basic dimensions listed in Table C1 (below):

Web Depth*
2- 1/2"
3-1/2"
3-5/8"
4"
5-1/2"
6"
8"
10"
12"
14"
16"

Flange Width and Return Lip *	
1-3/8"	3/8"
1-5/8"	1/2"
2"	5/8"
2-1/2"	5/8"
3"	5/8"
3-1/2"	1"

∗Any web depth can be combined with any flange width. However, flanges are required to use the return lip shown. Track members shall have a minimum 1-1/4" flange.

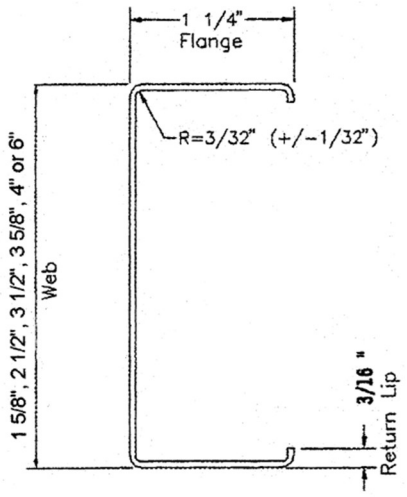
b. *Nonstructural Members* shall meet the dimensional requirements of AISI S220 including the following:

I. *Studs* shall have a *web* (outside) depth equal to those shown in Figure 1 (below). *Tracks* shall have an inside depth equal to those shown in Figure 1.

II. *Studs* shall have a minimum *flange* width of 1.25 inches in accordance with Section 5.2of AISI S220. *Tracks* shall have a minimum *flange* (leg) width of 1.00 inch per Section 5.2 of AISI S220.

III. *Studs* shall have minimum return lip of 0.1875 inches in accordance with AISI S220, Table A5.9.

Figure 1



C.1.2 Proprietary Structural and Equivalent Nonstructural Shapes

Proprietary Structural and *Equivalent Nonstructural* shapes approved product drawings shall include all critical dimensions. The approved product drawing shall include tolerances for all critical dimensions. Tolerances shall at a minimum match the prescribed tolerances in C2 for Standard C-Shapes.

C2 Manufacturing Tolerances

C2.1 Structural and Proprietary Structural members shall comply with the manufacturing tolerances listed in AISI S240 as a minimum. (Table A5-3 Manufacturing Tolerances and Figure 2 Manufacturing Tolerances from AISI S240 are reproduced below for reference.)

Table A5-3
Manufacturing Tolerances for Structural Members

Dimension[1]	Item Checked	C-shapes, in. (mm)	Tracks, in. (mm)
A	Length	+3/32 (2.38)	+ 1/2 (12.7)
		-3/32 (2.38)	-1/4 (6.35)
B[2]	Web Depth	+1/32 (0.79)	+1/32 (0.79)
		-1/32 (0.79)	+1/8 (3.18)
C	Flare	+1/16 (1.59)	+0 (0)
	Overbend	-1/16 (1.59)	-3/32 (2.38)
D	Hole Center Width	+1/16 (1.59)	NA
		-1/16 (1.59)	NA
E	Hole Center Length	+1/4 (6.35)	NA
		-1/4 (6.35)	NA
F	Crown	+1/16 (1.59)	+1/16 (1.59)
		-1/16 (1.59)	-1/16 (1.59)
G[3]	Camber	1/8 per 10 ft (3.13 per 3 m)	1/32 per ft (2.60 per m) 1/2 max (12.7)
H[3]	Bow	1/8 per 10 ft (3.13 per 3 m)	1/32 per ft (2.60 per m)
			1/2 max (12.7)
I	Twist	1/32 per ft (2.60 per m)	1/32 per ft (2.60 per m)
		1/2 max (12.7)	1/2 max (12.7)
J	Flange Width	+1/8 (3.18)	+1/4 (6.35)
		-1/16 (1.59)	-1/16 (1.59)
K	Stiffening Lip Length	+1/8 (3.18)	NA
		-1/32 (0.79)	

[1] All measurements are taken not less than 1 ft (305 mm) from the end.
[2] Outside dimension for *C-shape*; inside for *track*.
[3] 1/8 inch per 10 feet represents L/960 maximum for overall camber and bow. Thus, a 20-foot-long member has 1/4 inch permissible maximum; a 5-foot-long member has 1/16-inch permissible maximum.

C2.2 Nonstructural and Equivalent Nonstructural Members shall comply with the manufacturing tolerances listed in AISI S220 as a minimum. (Table A5-1 Manufacturing Tolerances and Figure 2 Manufacturing Tolerances from AISI S220 are reproduced below for reference.)

Table A5-1
Manufacturing Tolerances for Nonstructural Members

Dimension[1]	Item Checked	C-shapes, in. (mm)	Tracks, in. (mm)
A	Length	+1/8 (3.18)	+ 1(25.40)
		-1/4 (6.35)	-1/4 (6.35)
B[2]	Web Depth	+1/32 (0.79)	+1/8 (3.18)
		-1/32 (0.79)	-0 (0)
C	Flare	+1/16 (1.59)	+0 (0)
	Overbend	-1/16 (1.59)	-3/16 (4.76)
D	Hole Center Width	+1/8 (3.18)	NA
		-1/8 (3.18)	NA
E	Hole Center Length	+1/4 (6.35)	NA
		-1/4 (6.35)	NA
F	Crown	+1/8 (3.18)	+ 1/8 (3.18)
		-1/8 (3.18)	- 1/8 (3.18)
G	Camber	1/32 per ft (2.6 per m)	1/32 per ft (2.6 per m)
		1/2 max (12.7)	1/2 max (12.7)
H	Bow	1/32 per ft (2.6 per m)	1/32 per ft (2.6 per m)
		1/2 max (12.7)	1/2 max (12.7)
I	Twist	1/32 per ft (2.6 per m)	1/32 per ft (2.6 per m)
		1/2 max (12.7)	1/2 max (12.7)
J	Flange Width	+1/8 (3.18)	+1/2 (12.7)
		-1/16 (1.59)	-1/16 (1.59)
K	Stiffening Lip Length	+1/8 (3.18)	NA
		-1/32 (0.79)	

[1] All measurements shall be taken not less than 1 ft (305 mm) from the end.
[2] Outside dimension for *C-shape*; inside for *track*.

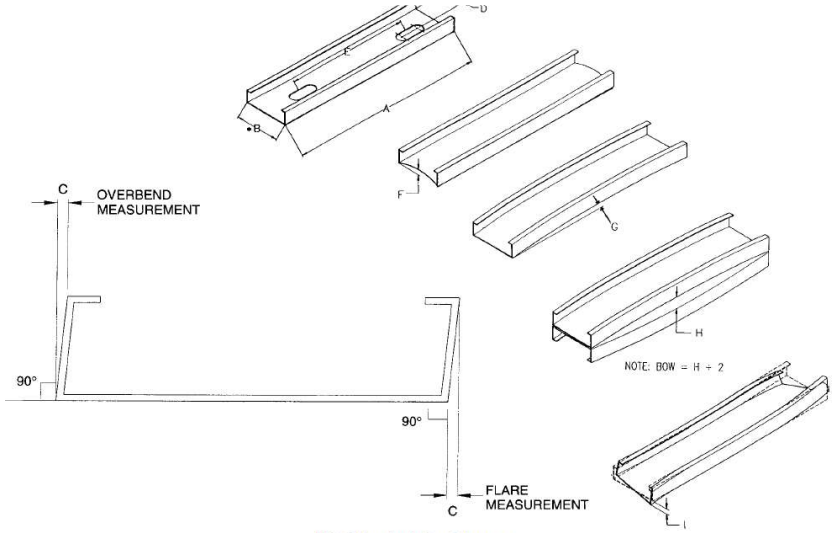


FIG. 2 Manufacturing Tolerances

C3 Punchouts

C3.1 Standard Punchouts

Structural, Proprietary Structural, Nonstructural, and *Equivalent nonstructural members* may or may not have *punchouts. Punchouts* shall comply with items 1 through 7:

1. *Punchouts* shall be symmetrical along the centerline of the *web* and be spaced along the centerline of the *web* of the framing member.

2. *Punchouts* shall have center-to-center spacing of not less than 24 inches (457mm); *Structural member punchouts* shall have a center-to-center spacing of not less than 24 inches (610mm).

3. Non-circular *punchouts* shall have a width not greater than half the member depth or 2-1/2 inches (63.5mm), whichever is less.

4. Non-circular *punchouts* shall have a length not exceeding 4-1/2 inches (114mm).

5. The distance from the end of the member and the center of the last *punch out* to the end of the member shall not be less than 12 inches (254mm).

6. Non-circular *punchouts* shall have corner radii greater than or equal to two times the minimum *base steel thickness.*

7. Holes shall have a minimum width of 9/16 inch (14mm).

Any configuration or combination of holes that fits within the *punchout* width and length limitations shall be permitted.

C3.2 Non-Standard Punchouts

Shapes with non-standard punchouts shall be included in the approved product drawings. The approved product drawing shall include tolerances for all punchouts. Test data shall be submitted to verify structural capacities of the members at the punchouts.

D. Product Identification

D1 Nomenclature

Structural Members and *Standard Nonstructural Members* shall be identified with a product designator as defined by Section A5.3 of AISI S240 and Section A5.3 of AISI S220 respectively. The product designator shall consist of the following sequential codes:

1. A three or four-digit numeral indicating member *web* depth in 1/100 inch.
2. A letter indicating:

   S = ***Stud*** or joist framing member which has *lips*
   T = ***Track*** section
3. A three-digit numeral indicating *flange* width in 1/100 inch, followed by a dash.
4. A two or three-digit numeral indicating designation thickness.

   Example: 362S162-54
   362=3-5/8 depth; S=*Stud*; 162=1-5/8" *Flange*; 54=0.0538" minimum thickness

Equivalent Nonstructural Members shall declare a similar standard product for the basis of equivalence. *Equivalent nonstructural members* shall have nomenclature that indicates member depth, type of member, *flange* width and thickness.

Proprietary Structural Members shall declare a nomenclature in their approved quality control manual.

D2 Product Marking

D2.1 Individual Structural and Proprietary Structural Members

D2.1.1 Code requirements for marking *Structural Members* are included in AISI S240, Section 5.5.2

1. Individual members shall have a legible label, stencil, or embossment at a maximum distance of 96 in. (2440 mm) on center, on the member, with the following minimum information:
   a. The rollformer's identification (that is, name, logo or initials).
   b. The minimum steel thickness, in mils or inches, exclusive of protective coatings.
   c. The minimum yield strength in kips per square inch (megapascals).
   d. The appropriate coating designator in accordance with AISI S240, Section A4.1.
   e. A label or mark indicating product is SFIA certified shall be added to the individual member.

Note:
- Members 6'-0" and shorter are not required to have the individual member marking applied.
- Members produced on a press brake are not required to have individual member labeling applied.
- Markings must be placed on the member such that they are visible and legible.

D2.2 Individual Nonstructural Members and *Equivalent Nonstructural Members*

D2.2.1 Code requirements for marking *Nonstructural Members* are included in AISI S220, Section A5.5.2.

1. Individual members shall have a legible label, stencil, or embossment at a maximum distance of 96 in. (2440 mm) on center, on the member, with the following minimum information:
   a. The rollformer's identification (that is, name, logo or initials).
   b. The minimum steel thickness, in mils or inches, exclusive of protective coating.
   c. The minimum yield strength in ksi (MPa) if other than 33 ksi (230 MPa).
   d. The protective coating type and weight, if other than as specified in AISI S220, Section A4.1.
   e. The designator NS
   f. A label or mark indicating product is SFIA certified shall be added to the individual member.

Note:
- Members 6'-0" and shorter are not required to have the individual member marking applied.
- Members produced on a press brake are not required to have individual member labeling applied.
- Markings must be placed on the member such that they are visible and legible.

D2.3 Groups of Members

D2.3.1 Individual Components Grouped in Bundles

Code requirements for marking units of Structural and *Proprietary Structural* Members are included in AISI S240, Section A5.5.1, Product Identification, as reproduced below:

Groups of like members shall be marked with a label or a tag attached thereto. Marking shall include the rollformer's identification (name, logo or initials), length, quantity, and rollformer's member designator including member depth, *flange* size, and minimum steel thickness in mils or inches exclusive of protective coating.

Code requirements for marking *Nonstructural Members and Equivalent Nonstructural Members* are included in AISI S220, Section A5.5.1., Product Identification, as reproduced below:

> Groups of like members shall be marked with a label, or a tag attached thereto. Marking shall include the roll-former's identification (name, logo, or initials), length, quantity, and roll-former's member designator including member depth, flange size, minimum steel thickness in mils or inches exclusive of protective coating, and the designation "NS".

Per A6.13 of this Program, Certification labels shall be applied to the bulk packaging.

D2.3.2 Individual Members Fabricated into Panels

Code requirements for marking *units* of *Structural and Proprietary Structural Members* are included in AISI S240, Section A5.5.1, "Product Identification".

Panels fabricated from components manufactured per the SFIA Certification program and bearing the required individual member marking shall have an SFIA certification label affixed to the panel indicating that the components are SFIA Certified. The label shall meet the requirements of Section A6.13.

D3 Color-Coding

Code requirements for color-coding *Structural, Proprietary Structural,* and *Nonstructural Members* are shown below. *Equivalent Nonstructural Members* shall follow the guidelines for the *similar Nonstructural Member* thickness.

1. Where color-coding of members or bundles of like members is employed, the standard color-coding below shall be used:

Color Coding for Members

Color	Minimum Base Metal	Minimum Decimal Equivalent	
	Thickness, mils	In.	(mm)
Dark Gray	15	0.0155	(0.0150)
None	18	0.0179	(0.455)
Brown	19 / Approved 20EQ	0.0190 *	(0.0190) *
Black	27	0.0269	(0.683)
Pink	30	0.0296	(0.752)
White	33	0.0329	(0.836)
Yellow	43	0.0428	(1.087)
Green	54	0.0538	(1.367)
Orange	68	0.0677	(1.720)
Red	97	0.0966	(2.454)
Blue	118	0.1180	(2.997)

* or per approved technical data

E. Performance Requirements

E1 Strength

Equivalent Nonstructural Members shall have a *Nominal Moment* (in the strong axis direction) equal to or greater than the *Nominal Moment* of the similar *standard member*. The *Nominal Moment* shall be determined by calculations as defined in AISI S100 or through testing described in Appendix B.

E2 Screw Performance

Nonstructural and Equivalent Nonstructural Members shall comply with Screw Penetration requirements in AISI S220 Appendix 1. The manufacturer shall provide *Independent Third Party* test results confirming that its *members* comply for each specified *product* thickness.

E3 Connections

Licensees shall publish screw shear, pullout and pullover values. Licensees of *Equivalent Nonstructural Members* shall provide data that confirms the values are equal to, or greater than, those for similar *Standard Nonstructural Members*. For *Equivalent* and *Standard Nonstructural Members*, Fu shall be equal to Fy, as no tensile strength requirements are specified for Type NS steels in ASTM A 1003/A 1003M. Calculations for *Equivalent Nonstructural Members* shall be conducted in accordance with the equations in Section E4 of AISI S100.

E4 Composite Stiffness

Licensees shall publish composite limiting heights in accordance with section A8.1.2 (e) of this program.

Appendix A – Program Version

Version	Date	Revised Sections
Version 1.0 – Original Draft	October 29, 2010	N/A
Version 1.1	November 19, 2010	Committee Review
Version 1.2	December 10, 2010	Committee Review
Version 1.3	January 17, 2011	Committee Review
Version 1.4	January 21, 2011	Committee Review
Version 1.5	January 31, 2011	Committee Review
Version 2.0	March 5, 2011	Committee Review
Version 3.0	October 2012	Committee Review
Version 3.1	August 2013	Multiple For Committee Review
Version 3.2	February 2016	Update to current reference standards
Version 3.3	May 2016	Tables and Figures for ASTM C645 and C955 updated to current dox
Version 3.4	April 24, 2019	Clarifications to various provisions. No updates to code requirements / references
Version 3.5	November 13, 2019	Clarifications to various provisions to ensure inclusion of Contractor / Manufacturers, addition of definitions, editorial corrections
Version 4.0	July 13, 2020	Clarification on what products must be enrolled, updated manufacturing tolerances to AISI which goes into effect January 1, 2021
Version 5.0	April 13, 2021	Editorial changes to update all, except corrosion requirements, to 2018 IBC and for clarification, removal of “Not SFIA”
Version 5.1	February 6, 2023	Editorial changes to add definitions and update Section B2 Corrosion Protection
Version 6.0	November 16, 2023	Expansion to include all Structural Products, effective January 1, 2024
Version 7	March 4, 2026	Editorial changes to clarify measuring devices and coating designator; C3 Program revamped and will be effective January 1, 2027

Appendix B – Method for Flexural Testing Cold-Formed Steel Beams

1. Scope

    1.1. This method establishes test procedures for determining the nominal flexural strengths of cold-formed steel C-sections subject to bending.
    1.2. This test method provides requirements for spacing discrete intermediate bracing to evaluate both local buckling and distortional buckling limit states.
    1.3. This method provides an alternative for evaluating the strength of flexural members that cannot be addressed using the analytic provisions of AISI S100.

2. Referenced Documents

    2.1. American Iron and Steel Institute (AISI), Washington, DC:
    AISI S100 *North American Specification for the Design of Cold-Formed Steel Structural Members.*
    2.2. ICC Evaluation Service, Whittier, CA:
    AC85 *Acceptance Criteria for Test Reports.*
    2.3. ASTM International (ASTM), West Conshohocken, PA:
    - A370, *Standard Test Methods and Definitions for Mechanical Testing of Steel Products*
    - E4, *Standard Practices for Force Verification of Testing Machines*
    - E6*, Standard Terminology Relating to Methods of Mechanical Testing*

3. Symbols

    a = shear span length of test specimen beam. See Figure 1 and 2
    b = center span length of test specimen beam. See Figure 1 and 2.
    L = total span length of test specimen, measured center-to-center of end supports. See Figures 1 and 2.
    P= total failure load of a test specimen.
    t = nominal base steel thickness, exclusive of coating.

4. Apparatus

    4.1. Test method shall generally be suitable for either hydraulic or screw operated testing machines.
    4.2. In lieu of a test machine, the load may be applied by a hydraulic cylinder. A calibrated load cell shall be used to measure the applied load to within ±1% of the expected ultimate load.
    4.3. Mid-span beam deflections shall be measured with linear displacement transducers (LDT)with least reading capabilities of 0.001 inch.
    4.4. Lateral support fixtures used in the test shall be installed in a manner that does not impede the horizontal displacement of the test specimen.

5. Beam Test Specimens

5.1. Test specimens shall be composed of two C-sections of like geometry, dimensions and material properties.
5.2. Discrete angle braces shall link the flanges of the two C-sections together to form a box section and provide lateral-torsional stability to the specimen.
5.3. Center span length for all test specimens shall be the larger of 4 times the calculated distortional buckling half-wavelength of the C-section or 36-in as detailed in Figures 1 and 2.
   a. Generally the default center span length b = 36-in will exceed 4 times the calculated distortional buckling half-wavelength, ℓ_d, which itself is typically several times the depth of the C-section.
   b. However, b = 4ℓ_d for some 6-in deep sections may be on the order of (4x2x6) = 48-in, requiring a modification to the reference test specimen geometry shown in Figures 1 and 2.
5.4. Longitudinal spacing of the angles used to brace the compression *flanges* of the C-sections influences the flexural failure mode of the test specimen.
   a. For local buckling, the longitudinal spacing of the compression flange braces shall be 3-in on-center within the center span, as detailed in Figure 1.
   b. For distortional buckling, a single discrete angle brace may be located at the mid-span of the center span, as shown in Figure 2.
      1. When the center span b = 36-in is much greater than 4 ℓ_d of the specimen, concern for lateral-torsional buckling may prompt the need for a mid-span compression brace.
      2. Consideration must be given to the magnitude of ℓ_d of the test specimen before installing a mid-span brace, so the brace does not inadvertently restrain, impede, restrict or hinder distortional buckling.
   c. Multiple braces spaced 6-in on-center shall be secured to the compression *flanges* within the shear spans of both specimen types and shall be secured with one screw to each compression flange within shear spans.
5.5. Spacing of the braces between the tension *flanges* of the two C-sections shall be 12” on-center for all test configurations.
5.6. Bearing stiffeners are required at each end bearing location and at the points of load application. These stiffeners are attached to the *webs* of the C-sections to prevent *web* crippling at these load transfer points.
5.7. Local buckling test specimens made with C-sections containing *web* knock-outs shall have one *web* knockout located at the mid-span of the constant moment region as shown in Figure 1.
5.8. Distortional buckling test specimens made with C-sections with *web* knockouts shall have one *web* knockout located at a distance of ½ the calculated distortional buckling half-wavelength from the mid-span of the constant moment region as shown in Figure 2.
5.9. Mechanical properties of the test specimens shall be determined from tensile tests conducted in accordance with ASTM A370.
   a. A minimum of three samples for mechanical properties testing shall be obtained from the slit coil used to roll-form each C-section specimen configuration.
   b. Base steel thickness, t, shall be measured from one stud of each test specimen pair.

c. An *Independent Third Party* shall witness the production of the test specimens and provide a certified chain of custody for samples obtained for mechanical property testing, if samples cannot be taken from the *webs* of the test specimens.
d. Base steel thickness of the material used to fabricate the test specimens shall not vary from the specified (design) thickness by more than ± 5%.

6. Flexural Test Setup

6.1. Four-point bending test configuration with loads applied at the third-points of the specimen span shall be adopted to determine the nominal flexural strength of the test specimens.
   a. The local buckling test set-up is illustrated in Figure 1 and the distortional buckling test set-up is shown in Figure 2.
   b. The load distribution beam applies two equal loads to either side of the center span to create a constant moment region with no shear stresses.
   c. Flexural and distortional buckling failures are expected to occur in the constant moment region of the test specimens.
   d. Failures outside the constant moment region may indicate that adjustments to the test configuration geometry are warranted.

6.2. Total span length (L) between outside supports shall be 108-in. The center span (b) shall be 36-in, and the two shear spans (a) to either side shall be 36-in. unless modifications to these span lengths can be justified by the requirements of Section 5.3

6.3. Flexural test specimens shall be supported by a pin condition at one end and by a roller condition at the other end. Similarly, the load distribution beam straddling the center span shall be supported by a pin condition at one end and a roller condition at the other end. The relative sequence of these support conditions is kinematically irrelevant.

6.4. External bracing members may be used to restrain the test specimen from lateral-torsional buckling. External bracing shall be limited to the shear spans or region between the point loads and the reaction points.
   a. External bracing members shall provide lateral support to guide, but not impede, the lateral displacement of the compression flanges and the vertical displacement of the beam specimen.
   b. Discrete external bracing shall be surfaced with HDPE along the interfaces with the test specimen.
   c. External bracing may be located at the beam specimen ends and at load points. Additional external bracing may be used within the center span of the distortional buckling specimens.

7. Beam Test Procedure

7.1. Initial load, or preload, may be applied to seat the test assembly. This preload shall not exceed 10% of the expected maximum test load.

7.2. Test load shall be applied at a maximum rate of 0.10 inch per minute. Loads shall be recorded to a precision of ± 1 percent of the expected maximum test load (P_t).

7.3. Mid-span beam displacements shall be recorded to the nearest 0.001 inch along with each recorded load to enable evaluation of the load-deflection behavior.

7.4. Test load versus deflection plots shall be displayed in real-time to allow monitoring of the structural response.

7.5. Peak test load is the maximum recorded load that the assembly supports during the test. The peak load per C-section member is considered to be one-half of the peak test load.

7.6. A minimum of three test assemblies of each C-section specimen configuration shall be tested for both flexural failure modes. More may be required, in accordance with AISI S100 Chapter F1:

a. "Evaluation of the test results shall be made on the basis of the average value of test data resulting from tests of not fewer than three identical specimens, provided the deviation of any individual test result from the average value obtained from all tests does not exceed +/- 15 percent."

b. "If such deviation from the average value exceeds 15%, more tests of the same kind shall be made until the deviation of any individual test result from the average value obtained from all tests does not exceed +/- 15%, or until at least three additional tests have been made."

c. "No test result shall be eliminated unless a rationale for its exclusion can be given. The average value of all tests made shall then be regarded as the nominal strength [resistance], Rn, for the series of tests."

8. Calculations

8.1. Evaluation of results to determine the flexural design strength of the tested specimens shall be made in accordance with the procedures in Chapter F1 of AISI S100, as modified by the following provisions.

8.2. Peak load determined by testing shall be multiplied by a strength reduction factor, RF, as determined below:

$$\mathbf{RF = [(F_{y\text{-specified}} / F_{y\text{-measured}}) (t_{specified} / t_{measured})] \leq 1.0}$$

where:

RF	=	reduction factor for the member
$F_{y\text{-specified}}$	=	Specified yield strength of the member (ksi)
$F_{y\text{-measured}}$	=	Measured yield strength of the member (ksi)
$t_{specified}$	=	Specified design thickness of the member (inches)
$t_{measured}$	=	Measured base steel thickness of the member (inches)

8.3. Factored peak loads for each test specimen configuration shall be used to calculate the nominal moment capacity of the tested components:

$$M_n = (RF\ P_t/4)\ a$$

where:

M_n	=	nominal moment capacity of a single C-section (in-k)
P_t	=	peak test load to entire test specimen (k)
RF	=	strength reduction factor
a	=	measured shear span length (in)

8.4. Nominal moment capacity of each C-section configuration shall be determined from the average of all applicable individual M_n values obtained from the tests.

9. Test Report

9.1. In addition to all relevant requirements of ICC AC85 Acceptance Criteria for Test Reports, the test report shall include the following:

a. Mechanical properties of the cold-formed steel C-section test members, including yield strength, tensile strength, percentage elongation and base steel thickness.
b. A description of the loading procedure used and the rate of loading.
c. Representative load versus deflection curves for each specimen configuration.
d. Individual test peak load values, derived load reduction factors, calculated safety factors.
e. Descriptions of each observed failure.
f. Photographs that supplement the detailed drawings of the test setup and the description of the failure mode(s).
g. The report shall include the nominal moment for each tested member.
h. Tabulated values of the Allowable Strength Design (ASD) and Resistance Factor Design (LRFD) loads for each C-section configuration evaluated.

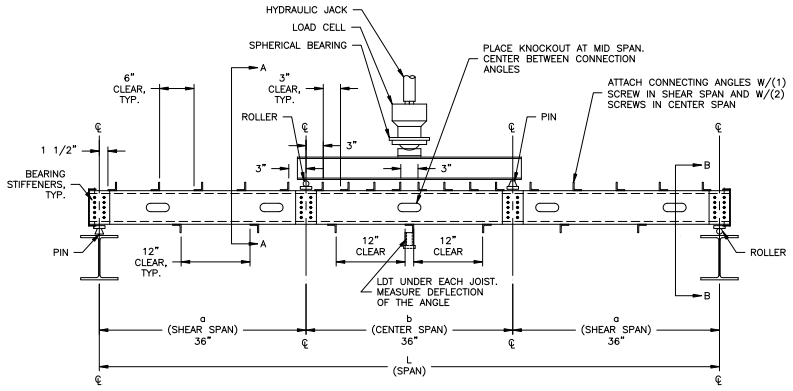


Figure 1

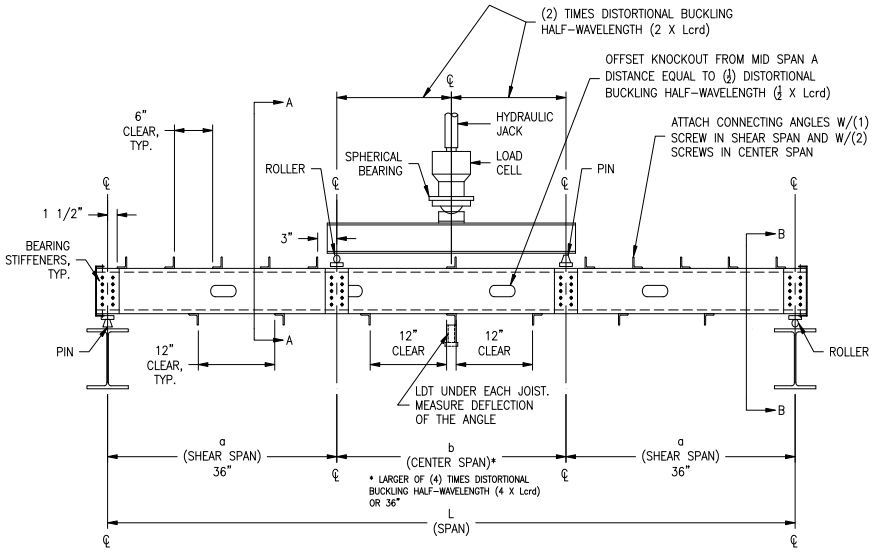
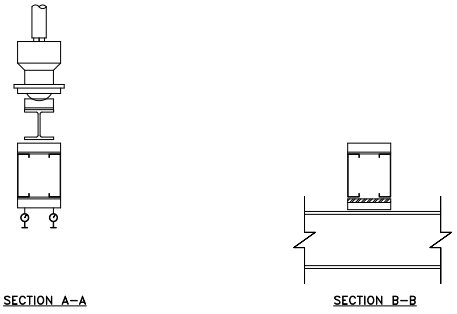


Figure 2



Appendix C – Composite Wall Testing and Analysis Protocol

Composite testing shall default to International Code Council Evaluation Service (ICC-ES) Acceptance Criteria AC86, Acceptance Criteria for Cold-Formed Steel Framing Members – Interior Non load-Bearing Wall Assemblies, and the requirements and specifications below.

1. *Gypsum Board* – 5/8" Gypsum board with a flexural strength up to 200 pounds of force (lbf) when tested in accordance with ASTM C473, method B, with bearing edges perpendicular to the panel length (strong axis) shall be considered "generic" and required for baseline testing. For the development of additional limiting height tables for proprietary products, manufacturers may use gypsum board with strength greater than 200 lbf as long as the manufacturer of the gypsum board is clearly specified in the load tables.

2. *Gypsum Sheathing Orientation*: Gypsum board shall be placed with the long edge parallel to the wall studs (vertical).

3. *Sheathing Gap*: The bottom of the wall shall have a gap between the sheathing and structure (test apparatus) complying with ASTM C840 Section 7.1.3.1. This Standard requires a gap at the bottom of the board for field installation. Tested assemblies shall include a ¼ gap between the bottom of the board and the bottom of the assembly.

4. *Gypsum Board Joint Locations*: These will be aligned on opposite sides of the wall for horizontal joints.

5. *Screw Spacing from Gypsum Board to Stud/Track*: Screws shall be installed per the following table based on ASTM C840 Section 8.5 & 15.3.1.

Stud spacing (inches)	Screw Size	Screw spacing minimum (inches)
12	#6	16
16	#6	16
24	#6	12

6. *Screw Type*: Screw size, in accordance with ASTM C1002 Section 8.4, is #6 (major diameter not less than 0.136").

7. *Screw Spacing from Gypsum to Stud/Track*: There shall be no screws from track to stud (steel to steel connection). The perimeter and field spacing of screws shall be the same, as shown in the table above.

8. *Gypsum Screw Placement*: As noted above, gypsum board to steel screws shall not engage both the track and the stud. It does not matter where the first screw goes, as long as it doesn't go through both track and stud.

9. *Track Leg*: The track leg length does not influence the composite behavior of the test specimen. The track shall have a maximum 1.25 inch leg (flange) length for the 4' end reaction strength test.

10. *Framing Screws*: No framing screws will be used.

11. *Gap Between Stud &Track*: The gap does not impact the stiffness test, but it does affect the end reaction test. Therefore, no gap requirement is specified for the panel test; ¼ gap at bottom only is required for the short (4') end reaction test.

12. *Tested Depths per Thickness*: Composite testing shall be required on all depths of nonstructural products offered by the manufacturer. Interpolation is not permitted between depths, but thickness interpolation is permitted.

13. *Tested Thicknesses*: If all thicknesses have the same yield strength, then only low and high thicknesses are required to be tested. If there is a yield strength change, then the low and high of each yield strength variation shall be tested.

14. *Tested Assembly Heights*: Three test series shall be performed for each product. The three test series will consist of a 4-foot strength test series and two stiffness test series (short and tall.)

Test Wall Span (ft)							
Test Assembly	Member Depth						
Short Walls	1-5/8"	2-1/2"	3-1/2"	3-5/8"	4"	5-1/2"	6"
t_{design}< 0.025"	8	8	8	8	8	12	12
t_{design}> 0.025"	8	8	10	10	10	16	16
Tall Walls	1-5/8"	2-1/2"	3-1/2"	3-5/8"	4"	5-1/2"	6"
All thicknesses	**12**	**12**	16	16	16	20	20

For all test wall panels in the matrix above, a single, vertically oriented gypsum panel shall be used (single piece) for all walls up to 12'. For a 14' wall height, use 12' + 2'. For the 16' height (if used), use 12' + 4'; for 20', use 12' + 8'. This would put the joints in the same place for all companies for all tests. It shall be acceptable for the 8' and 10' samples to be cut from 12' board.

15. *Material Witnessing*: As required by AC86.

16. *Test Laboratory Certification:* All testing shall be conducted by an IAS accredited test laboratory approved to conduct AC86 /ASTM E72 testing.

Appendix D – *Quality Manual* Required Information

- Approval Signatures
- Organization information
  - Manufacturing location
  - Primary and secondary contact information
- Manual review and revisions
- Cross-reference matrix of required information
- *Product* Description
  - *Product* identification
  - In-process quality control
  - Final inspection
  - Nonconforming *Product*s
- Traceability
- Production Flow Chart
- *Product* Change Procedure
- Organization Structure and Job Responsibilities
  - Organizational Chart
- *Product* Storage and Handling
- Complaints procedure
- Ordering and Incoming materials
  - Receiving procedures
  - Nonconforming materials
- Measuring and Testing equipment
  - Calibrations
  - Verifications
- Record Retention Policy
- Employee records
- Training records
- Supplier List and *acceptance criteria*
- Quality Control forms
  - Minimum Thickness Chart
  - Materials Receiving Report
  - Production Sheet
  - Quality Control Check Sheet for Structural *Product*s
  - Quality Control Check Sheet for Nonstructural *Product*s
  - Equipment Verification Log
  - Equipment Calibration Log
  - Customer Complaint Form
  - Training Record form
- *Product* drawings
- List of Profiles for SFIA Certification

Note: The quality manual must be reviewed annually