

Memorandum of Understanding between
Metal Construction Association
and
Paint and Coating Manufacturers
for
Metal Construction Association Roofing Certification Program

I. Common Agreements and Principles

- A. This is a binding agreement between COMPANY (paint and coatings manufacturer) and the Metal Construction Association (MCA), by which COMPANY joins the Metal Construction Association Roofing Certification Program. The terms of this Memorandum of Understanding (MOU) shall apply to paint systems and granular products sold under their own brand name(s) by COMPANY to residential metal roof product manufacturers participating in the Metal Construction Association Roofing Certification Program.
- B. COMPANY and MCA agree that the primary purpose of the Metal Construction Association Roofing Certification Program is to promote the use of high quality paint and coatings in the manufacturing of metal roofing products used in steep slope applications, thereby reducing the potential of sub-standard quality materials failing prematurely in the marketplace.
- C. COMPANY and MCA agree that publicizing the Metal Construction Association Roofing Certification Program is important to demonstrate the following: The concern of COMPANY for quality, the concern of the MCA for quality, and the capability of cooperative programs to achieve industry goals.
- D. COMPANY and MCA agree that as technologies and markets change, it may become desirable to revise the specifications contained in this MOU. COMPANY will be sent notice of proposed changes and have an opportunity to provide feedback.
- E. COMPANY and MCA agree that maintaining public confidence in the Metal Construction Association Roofing Certification Program is critical to achieving the shared goals of COMPANY and MCA.
- F. COMPANY and MCA agree that participation in the Metal Construction Association Roofing Certification Program is essential to the cooperative effort to achieve the shared goals stated above.
- G. COMPANY and MCA agree with the content of the *MCA Guide Specification for Residential Metal Roofing*, and any revisions deemed necessary.
- H. COMPANY and MCA agree that Roofing products that are to be walked shall be free of visible liquid lubricants when they are shipped from the plant. The coil ordering and manufacturing processes shall minimize the presence of dry residues at time of shipment and on walking surfaces. For more information on this issue, please refer to

the Steel Coalition Lubricant Task Group Final Report, dated May 14, 2002, found at www.metalconstruction.org.

II. Definitions

A. Premium

Any paint or coating system that when properly applied to metal roofing products meets the premium performance definitions as stated in *MCA Guide Specification for Residential Metal Roofing*, Section 2.07 Finishes, dated August 22, 2002, and shown in attachment A.

B. Standard

Any paint or coating system that when properly applied to metal roofing products meets the standard performance definitions as stated in *MCA Guide Specification for Residential Metal Roofing*, Section 2.07 Finishes, dated August 22, 2002, and shown in attachment A.

C. Emerging technologies

Recognizing that technical development and advancement is desirable, especially as it pertains to the exterior durability of coatings, and also recognizing the program requirement of 5- and 10-year real-time weathering data, MCA may except emerging technologies from these requirements so long as the Metal Construction Association Review Board of industry experts thoroughly reviews any data that it deems important and concludes that the emerging technology is worthy of an exception. Such exceptions may only be extended until such time that the coating system has complied with the real-time weathering requirements. At this point, the review board must evaluate the 5- or 10-year results (whichever one applies) and issue a formal assessment of compliance to the program.

Manufacturers of emerging technologies related to new substrates used for metal roofing applications are required to comply with the testing protocol shown in Attachment E.

At the discretion of the Review Board, data will be reviewed on an annual basis. (See attachment C for special fee schedule.)

D. Logo

The graphic or mark that appears on all packaging, promotional literature, and advertising that indicates the metal roof product complies with the Metal Construction Association Roofing Certification Program and all referenced performance criteria.

E. "Metal Construction Association Certified" label

The phrases "Metal Construction Association Certified Premium Painted™" or "Metal Construction Association Certified Standard Painted™" will be used to describe a painted metal roof product that is part of the Metal Construction Association Roofing Certification Program. These phrases will be registered certification marks of MCA, and will be used in accordance with all rules pertaining to the use of a registered certification mark.

F. Formula change

Individual or accumulated changes in resin, pigment, pigment grind, materials ratios or anything which in aggregate changes the weathering properties of a paint system, granular product or coating by more than 5%.

G. Steep slope

A pitch on a roof that is greater than a 2-inch rise over a 12-inch run

III. Effective date of MOU and duration

- A. This MOU shall be effective when signed by both MCA and COMPANY.
- B. Both parties agree that COMPANY may begin to qualify products pursuant to section IV.C, below, beginning upon receipt of notification of approval.
- C. Both parties agree that the terms of this MOU shall govern its implementation until the last day of the month, 12 months after notification of approval. (For example, if notification of approval is made October 15, 2003, the MOU is valid until October 31, 2004.) To maintain participation in the certification program, COMPANY will be required to sign a new MOU and pay the renewal fee. If there are revisions to the program, only those products that meet the revised specifications may be included in the certification program.
- D. Both parties agree that this agreement can be terminated by COMPANY or MCA at any time, and for any reason, with no penalty or liability to either party. However, both parties agree that termination for noncompliance would only occur in accordance with the procedures of section VIII. below.

IV. COMPANY's responsibilities

- A. Appointment of liaison
COMPANY agrees to appoint a responsible representative of COMPANY as liaison to MCA for the Metal Construction Association certification program and to notify MCA within one month of any change in liaison designation.
- B. Number of products required
COMPANY agrees to develop and/or market, during the duration of this agreement, one or more paint systems that meet the specifications outlined in section IV. C. below.
- C. Product qualification for the Metal Construction Association certification label
COMPANY agrees that only those paint systems that meet the specifications stated in the *MCA Guide Specification for Residential Metal Roofing*, Edition 1, Section 2.07 Finishes, (see attachment A) may qualify as Metal Construction Association certification program compliant.

COMPANY agrees to provide MCA COMPANY's application form (attachment B) with information that its paint products comply with the specification. COMPANY will self-certify those products that it determines meet the specifications outlined in section IV.C. COMPANY shall indicate on the application form those coating systems that qualify for Metal Construction Association Certified Premium™ or Metal Construction Association Certified Standard™, depending on compliance with specifications as described in section IV. C.

- D. Quality control program
COMPANY agrees to conduct an ongoing quality control program to ensure that its compliant roof products continue to meet or exceed the performance specifications as described in section IV.C. This quality control program shall be approved in writing on an annual basis by a laboratory that is accredited as complying with ISO/IEC

Standard 17020 or any other accreditation body that is a signatory to the International Laboratory Accreditation Cooperation Mutual Recognition Arrangement. COMPANY acknowledges its obligation to provide MCA with documentation on an annual basis of the quality control program and to inform MCA of any changes to the program.

Also, COMPANY acknowledges the obligation under the program to inform MCA of formula changes.

COMPANY agrees to cooperate fully with any audit that may be conducted in connection with the Metal Construction Association certification program.

E. Application fees

COMPANY agrees to pay application fees as described in attachment C and the fees shall accompany application form (see attachment B) sent to MCA. Fees shall be paid in advance and are non-refundable.

F. Logo use guidelines

COMPANY shall have no rights to use the Metal Construction Association certification name or logo. Violation of the requirements by COMPANY may, at the sole discretion of MCA, result in the revocation of the COMPANY authorization with respect to all COMPANY products.

G. Label use

COMPANY shall have no rights to use the Metal Construction Association label. The labels or “Metal Construction Association Certified Premium Painted™” or “Metal Construction Association Certified Standard Painted™” may appear on all individual parts or pieces of roofing products involved in this certification program, to describe “Premium” or “Standard” product. When the Metal Construction Association certification program is used, COMPANY agrees that it will be accompanied by the following statement: “As a Metal Construction Association certification program supplier, (COMPANY name) has determined that this product meets the performance guidelines as stated in the *MCA Guide Specification for Residential Roofing*, Section 2.07 Finishes.” MCA reserves the right to review language used in marketing communications referencing the performance of paint systems that comply with the performance specifications as described in section IV. C.

H. Employee education and training

COMPANY agrees to provide information about the Metal Construction Association certification program to all of its employees whose jobs are relevant to the development, marketing, sales, and service of Metal Construction Association certified-compliant roof products.

Materials will describe the Metal Construction Association certification program and COMPANY’s participation in the program, provide information about the attributes of high quality coatings used for metal roofing products, and identify products that comply with the Metal Construction Association certification program. Materials may include specification sheets, point of purchase displays, informational fact sheets, demonstration models, etc. MCA will prepare, and provide upon request, standard materials such as generic specification sheets or technical bulletins for use by companies.

I. Customer education

1. Consumer awareness through product literature

COMPANY may determine the best manner through which to disseminate the following information to users. Examples of acceptable approaches include: special brochures provided with qualified products, sales literature, point of purchase displays, information in specification sheets, maintenance information, etc. Brochures and advertisements will be worded to avoid misleading interpretations.

2. COMPANY will provide general information to manufacturers regarding the benefits of certified paint and coatings systems. This information may include a description of the Metal Construction Association certification program and a discussion of the performance attributes of high quality coatings for roofing.

J. Claims for compensation

COMPANY agrees that the activities it undertakes connected with this MOU are not intended to provide services to MCA and that COMPANY will not submit claims for compensation to MCA.

K. Termination

If either MCA or COMPANY terminates this agreement, COMPANY will no longer be entitled to make reference to the Metal Construction Association certification program so as to convey continuing involvement in the program.

V. MCA responsibilities

A. Appointment of liaison

MCA agrees to designate a single liaison point for the Metal Construction Association certification program and to notify COMPANY within one month of any change in liaison designation. The signed MOU and other correspondence should be sent to this person.

B. Maintenance of records

MCA agrees to maintain all application forms, records, and substantive correspondence from COMPANY and treat them as confidential except as may be required by law.

C. Product evaluation and audit

MCA agrees to accept certification by COMPANY, whether it is self-determined or determined by an independent third party, that its qualified products satisfy the specifications set forth in this MOU. While this is a self-certifying process, MCA reserves the right to evaluate products, verify submission data, and audit facilities involved in the Metal Construction Association certification program.

D. Consumer acceptance

MCA agrees to encourage consumer acceptance of metal roofing products introduced under this certification program and bearing the Metal Construction Association certified label. MCA will keep a product listing of compliant products and provide it to the public upon request in hard copy and electronically on the World Wide Web.

- E. Consumer education
MCA agrees to promote metal roofing products and to inform consumers about the Metal Construction Association certification program by writing articles and/or cooperating with the media by sharing information where appropriate.

VI. Indemnification

COMPANY understands that participation in the Metal Construction Association certification program does not constitute MCA endorsement of COMPANY or its products.

COMPANY agrees to indemnify and hold MCA and its officers, directors, trustees, certification program committee, review board, employees, and agents harmless from and against any and all claims, actions, causes of action, suits, losses, damages and liabilities arising under or related to this agreement, including, but not limited to, attorney's fees and costs of defense, arising from any contention or allegation, whether well founded or otherwise, based on any acts or conduct of COMPANY, MCA or their agents including, but not limited to, COMPANY's participation in the Metal Construction Association Roofing Certification Program, COMPANY's use of the Metal Construction Association certification name or logo, COMPANY's marketing, sale, installation, or use of products bearing the Metal Construction Association certification name or logo or claims based on certification, the denial of certification, the withdrawal of certification, or the conduct or findings of any audit in connection with the Metal Construction Association certification program.

VII. Limitation of liability

IN NO EVENT SHALL MCA BE LIABLE TO THE COMPANY FOR AN AMOUNT IN EXCESS OF THE APPLICATION FEES (SECTION IV.E) PAID BY THE COMPANY BASED ON ANY CLAIM ARISING OUT OF OR RELATED TO THIS AGREEMENT, INCLUDING BUT NOT LIMITED TO CLAIMS BASED ON CERTIFICATION, THE DENIAL OF CERTIFICATION, THE WITHDRAWAL OF CERTIFICATION, OR THE CONDUCT OR FINDINGS OF ANY AUDIT IN CONNECTION WITH THE METAL CONSTRUCTION ASSOCIATION CERTIFICATION PROGRAM, REGARDLESS OF WHETHER THE CLAIM IS BASED ON WARRANTY, CONTRACT, TORT OR ANY OTHER LEGAL THEORY.

VIII. Conflict resolution

- A. Good faith principle
Each party agrees to exercise good faith as a general principle for resolving conflicts under the Metal Construction Association certification program.
- B. Notification of problems
Both parties agree to notify each other if any problems or issues arise and to work together to provide maximum public confidence in the program.
- C. Procedure for addressing noncompliant products
 - 1. If MCA receives information that one or more coating products submitted by COMPANY as "Metal Construction Association Certified Premium Painted™" or

“Metal Construction Association Certified Standard Painted™” may not meet all of the conditions of this MOU, then MCA will notify COMPANY and attempt to resolve the allegation informally.

2. If these informal discussions do not produce a mutually agreeable resolution, MCA will submit the case to a review board of industry experts, administered by the MCA, for review and comment.
3. Corrective action determined by the review board will be communicated to COMPANY by MCA. COMPANY acknowledges that it will be terminated from the certification program and certification will be withdrawn unless it undertakes the specific corrective action sought by MCA and the review board. If COMPANY disagrees with the decision of the review board, it may initiate an arbitration proceeding under section IX of the agreement within 60 days of the date of the review board’s decision. If no arbitration is initiated within 60 days, the decision of the review board will be final, conclusive, and binding on COMPANY.
4. In the event of disputes or challenges, the non-prevailing party shall pay all costs incurred for the review board, the investigation process, and the arbitration, including reasonable attorney’s fees.
5. MCA will pay its expenses associated with the audit. If the COMPANY does not pass the audit and additional work is required by MCA, any MCA expenses for the additional work will be the COMPANY’s responsibility.

D. Notification in writing

If COMPANY believes that MCA is not meeting all of its obligations under this MOU, COMPANY may formally notify MCA in writing. MCA agrees to respond in writing within 30 business days of receipt of COMPANY’s letter. At that time, MCA will do one of the following: a) undertake the corrective actions sought by COMPANY, or b) explain why such corrective actions cannot be undertaken.

IX. Arbitration

Any controversy or claim arising out of or relating to this agreement or the performance or non-performance of this agreement shall be referred to and finally settled exclusively by arbitration in Chicago, Illinois, in accordance with the Commercial Arbitration Rules of the American Arbitration Association. Any claim must be asserted in arbitration within one (1) year after the accrual of the cause of action, or within 60 days for a dispute under section VIII of the agreement, or it shall be forever barred. The arbitration award shall be final and conclusive on the parties to this agreement, and judgment upon such award may be entered in any court having jurisdiction. The non-prevailing party shall pay the costs of the arbitration, including reasonable attorney’s fees.

X. Confidential business information

Both parties understand that information provided by COMPANY to MCA will be treated confidentially in accordance with MCA’s public information regulations.

The undersigned hereby execute this Memorandum of Understanding on behalf of their parties. The signer of this agreement affirms that he/she has the authority to commit COMPANY to participation in the Metal Construction Association Roofing Certification Program.

For the Metal Construction Association:

Signature: _

Date: _

Name: _

Title: _

For COMPANY (Technical Director or authorized COMPANY representative):

Signature: _

Date: _

Name: _

Title: _

Attachment A

MCA Guide Specification for Residential Metal Roofing

SECTION 2.07 FINISHES

JANUARY 2012

B. Coil Coated Metal (using liquid coatings)

NOTE: The exterior coating of a prepainted metal residential roofing system shall fall into two categories: *Premium Performance* system and *Standard Performance* system. In the following sections, where a test method differentiates Premium and Standard Performance systems, a distinction is clearly noted. Where the test method does not differentiate the systems, no distinction is made.

1. Pretreatment

Proper cleaning and pretreatment of metals are critical components of the high performance paint finish used for metal roofing panels. To obtain proper long term performance of coatings used for metal roof panels, metal must be cleaned of any contaminants associated with the steel or aluminum processing/manufacturing. Pretreatments then convert the metal surface into a non-metallic coating to obtain proper adhesion by a chemical/physical bond, increasing the durability of both the base metal and paint finish by providing an additional barrier layer and protecting areas where damage to the paint may occur during the life of the roof.

Many different types of pretreatment systems are currently available. The performance of each individual pretreatment may vary depending upon the metals that are being treated, the overlying paint system and the geographical area of the country where the metal roof panels are being installed. Most locations are identified as rural, industrial, marine or severe marine environments.

The most commonly used pretreatments for metal roof panels are as follows:

Complex oxides – used on hot dip galvanized steels

Complex oxides provide excellent flexibility in the forming operation of steel panels. Generally this type of pretreatment is not formulated to provide additional barrier protection and steel surface conversion in environments subject to acid rain, industrial chemicals and fumes or marine and severe coastal locations.

Zinc phosphates – used on hot dip galvanized steels

Zinc phosphates typically provide increased corrosion resistance of galvanized steels by the surface conversion during the pretreatment process. They have been used commercially for over 100 years, but have undergone evolutionary improvements, including the use of additives and refinement of the process which have increased the durability of steel roofing panels that have difficult forming requirements. This pretreatment is commonly recommended when the galvanized steel roof panel is subject to aggressive environments such as areas subject to acid rain, industrial chemicals and fumes or marine and severe coastal locations.

Complex chrome oxides – used on aluminum/zinc alloy coated steels and aluminum

Complex chrome oxides have been used extensively on both aluminum/zinc alloy coated steels and aluminum. They are available as conversion coatings as well as dry-in-place

coatings. Complex chrome oxides provide excellent formability as well as field-proven corrosion resistance to the base metals.

New emerging technologies are forthcoming in the metal pretreatment industry. Some, such as chrome-free, are already commercially available. The new technologies are being developed to improve or maintain the performance of pretreatments while offering cleaner methods and therefore reducing the environmental impact of pretreatments. The existing technology combined with these newer emerging systems only add to the green aspects of metal roofing and their long life performance as compared to other roofing materials.

Due to the varying types of base metals, pretreatments and paint systems used, the building owner should consult with their metal roof supplier to insure all aspects of the coating system are considered prior to the selection of materials.

2. Exterior Coat

- a.) Primer shall meet the coating manufacturer's technical data sheet requirements.
- b.) Topcoat shall meet the coating manufacturer's technical data sheet requirements, be fully cured and of consistent color throughout the Project of uniform color consistent with the established color range. Limits for acceptable production color variations are to be established between the approval source and applicator.
- c.) Flexibility and Adhesion
 - 1.) T-bend Test (ASTM D 4145): 4T, or better, no tape-off, and shall meet the coating manufacturer's technical data sheet requirements.
 - 2.) Reverse Impact (ASTM D 2794, 5/8" [16 mm] ball): 3000X metal thickness (expressed in inch-pounds¹) for referenced steel materials in section 2.02 A of this specification, or 1500X metal thickness for aluminum; no tape-off, and shall meet the coating manufacturer's technical data sheet requirements.
- d.) Accelerated Environmental Tests—Expected Results

Corrosion Resistance

- 1) Salt Spray (ASTM B 117): 8F, maximum, blistering in the field of the test panel (rated per ASTM D 1654), ≤ 3 mm creepage at the scribe, and ≤ 5 mm creepage from the edge, after 1,000 hours.
- 2) Humidity Resistance (ASTM D 2247 or D 1735): No blistering, cracking, creepage, or corrosion, after 1,000 hours.

¹ Example: For 0.020" HDG, the reverse impact inch-pounds used would be 0.020 x 3000 = 60 inch-pounds.

- 3) Pollution Resistance (ASTM D 1308): No visual effects, including color change, when 10 drops of 10% HCl acid are placed on the panel for 15 minutes.

e.) Abrasion Resistance

Abrasion resistance shall be determined using the falling sand test method ASTM D 968.

The Abrasion Coefficient shall be calculated according to the formula:

$$\text{ABRASION COEFFICIENT (Liters per mil)} = V/T$$

where: V=volume of sand used in liters

T=thickness of coating in mils

- 1) **Premium Performance** systems shall have an Abrasion Coefficient Value of 40 minimum.
- 2) **Standard Performance** systems shall have an Abrasion Coefficient Value of 20 minimum.

- f.) Weathering Properties (45° South exposure in Florida, open-rack configuration, exposed at a latitude between 25°N and 30° N):

(NOTE: Panels are first to be washed mildly with a dilute soap solution before measuring color change and gloss.)

1.) **Premium Performance** systems require **10 years real-time exposure**.

- 5 Hunter ΔE maximum color change (ASTM D 2244)
- #8 chalk rating; #6 chalk rating for whites (ASTM D 4214, Method A)
- 50% minimum gloss retention (ASTM D 523)

2.) **Standard Performance** systems requires **5 years real-time exposure**

- 5 Hunter ΔE maximum color change (ASTM D 2244)
- #8 chalk rating; #6 chalk rating for whites (ASTM D 4214, Method A)
- 30% minimum gloss retention (ASTM D 523)

3. Back Coat

Backer systems for hot-dipped galvanized steel, aluminum-zinc coated steel, and 5% aluminum-zinc coated steel, as referenced in Section 2.02 A, shall meet the coating manufacturer's technical data sheet requirements.

Attachment B

Metal Construction Association Roofing Certification Program Paint and Coating Manufacturer Application Form

Please print or type all information except your signature.

Company name

Company address

Contact name and title

Contact address if different from above

Telephone number

Fax number

Cell phone number

E-mail address

Submission type

Painting System

- Premium (10-year exposure data required)
 Standard (5-year exposure data required)

Other Coating

- Premium (10-year exposure data required)
 Standard (5-year exposure data required)

Trade name: _

Color family	Hunter L value ¹	Hunter A value	Hunter B value	Formula number	ΔE	% Gloss retentio	Chal k
White	Greater than 70	Between -3 and 0	Between -2 and 10				
Red	Between 20 and 30	Between 15 and 30	Between 10 and 15				
Tan	Between 55 and 70	Between 0 and 6	Between 10 and 17				
Brown	Between 20 and 30	Between 1 and 8	Between 2 and 8				
Blue	Between 20 and 40	Between -7 and -2	Between -20 and -10				
Green	Between 18 and 30	Between -20 and -5	Between 0 and 4				
Gray	Between 30 and 55	Between -3 and 0	Between 0 and 2				

¹0/45 Geometry

Quality control evaluation service: _

Date of last approval of quality control plan (month/date/year): _

Signature (technical director or authorized representative)

Date

Attachment C

Metal Construction Association Roofing Certification Program Fee Schedule

Application fee (per paint system)	\$4,000	(MCA Members)
	\$6,000	(non MCA Members)
Annual renewal (per paint system)	\$1,000	(MCA Members)
	\$1,500	(non MCA Members)

Emerging technology review

Applications submitted for approval under the emerging technology provision require additional review by the Metal Construction Association Roofing Certification Review Board. Costs of this review process are borne by COMPANY. The review process costs will be paid from the COMPANY's application fee. If review costs exceed \$3,000, the difference will be paid by COMPANY in addition to the application fee. COMPANY may request an estimate for potential review costs, which will be provided after initial review of COMPANY's application. MCA is not responsible for variance between the estimated and actual costs.

All fees are nonrefundable.

Attachment D

Metal Construction Association Roofing Certification Program Requirements for Quality Control Program

1.0 PURPOSE

- 1.1 To establish Quality Control Program requirements that satisfy the precepts of the Metal Construction Association Roofing Certification Program.

2.0 REQUIREMENT FOR INDEPENDENT INSPECTION

- 2.1 On an annual basis, the written Quality Control procedures of each participating company must be reviewed for compliance with certification program guidelines and approved by an independent agency that is accredited as complying with ISO/IEC Standard 17020 or any other accreditation body that is a signatory to the International Laboratory Accreditation Cooperation Mutual Recognition Arrangement.

3.0 GENERAL REQUIREMENTS

- 3.1 Each participant must have a Quality Control Manual, or equivalent documentation, that demonstrates compliance with the requirements of the program as outlined below.
- 3.2 On an annual basis, each participant must provide MCA with documentation substantiating approval of the Quality Control program by an approved, independent agency and describing changes to the Quality Control program. The independent agency will determine whether written procedures in the Quality Control Manual, or equivalent documentation, comply with requirements of the Metal Construction Association Certification Program.
- 3.3 As set forth in the Memorandum of Understanding, the MCA reserves the right to evaluate products and audit facilities involved in the Metal Construction Association certification program. These audits may include inspections to determine whether actual procedures of the audited company comply with the requirements stated in this document. For convenience, these requirements are summarized Appendix A for paint/coating manufacturers and Appendix B for roofing manufacturers.

4.0 CONTENTS OF QUALITY CONTROL MANUAL

- 4.1 The manual must contain a valid agreement with a qualified quality control inspection agency for annual reviews of Quality Control procedures, as described above.
- 4.2 The manual must document ordering practices for raw materials, substrates, and coatings, as applicable, that are consistent with Metal Construction Association roofing product or finish certifications.
- 4.3 The manual must document procedures to ensure that incoming materials comply with the *MCA Guide Specification for Metal Residential Roofing*. This requirement may be satisfied by certificates of compliance from ISO certified vendors, test reports from vendors, internal inspection reports, or equivalent documentation.
- 4.4 The manual must describe the method by which roofing products or coatings can be traced to inspection records for materials used in their manufacture (substrates, paint finishes and coatings for metal roofing manufacturers; resins and other raw materials for coating manufacturers), as applicable.

- 4.5 The manual must document procedures to guarantee that roofing products manufactured from non-conforming materials are not labeled with the Metal Construction Association label.
- 4.6 The manual must contain a table of roofing products, substrates, paint or coating trade names, paint or coating supplier's Metal Construction Association approval numbers, and Metal Construction Association performance categories, as applicable, for which Metal Construction Association Certification Program approval has been granted.
- 4.7 For roofing manufacturers, the manual must document procedures for labeling Metal Construction Association certified metal roofing products.
- 4.8 For roofing manufacturers, the manual must document procedures for displaying the Metal Construction Association certification program logo.

5.0 REQUIRED STATEMENTS

- 5.1 Only roofing products that comply with Metal Construction Association performance requirements will be labeled.

Attachment E
Testing Protocol for Acceptable New Substrates for
MCA Metal Roofing Certification Program

Prerequisites:

1. Substrate must have a relevant and current ASTM Standard established.
2. Manufacturer technical literature must be readily available.

Painted Products

Test samples of new substrates intended to be painted must be evaluated in triplicates with a Standard Performance paint system as outlined in the MCA Metal Roofing Certification Program. All new substrates being evaluated must show painted performance compared to G90 HDG and AZ50 55%Al-Zn coated steel controls with same type of paint system.

The control material must comply with Metal Construction Association Certified Standard Painted™ provisions.

All test panels must include:

- 3-T bend
- 5/8 “ reverse impact
- scribe to the metallic coating

Exterior Coat

- a.) Primer shall meet the coating manufacturer’s technical data sheet requirements.
- b.) Topcoat shall be fully cured and of consistent color throughout the Project of uniform color consistent with the established color range. Limits for acceptable production color variations are to be established between the approval source and applicator.

Flexibility and Adhesion

- 1.) T-bend Test (ASTM D 4145): 3T, or better, no tape-off (ASTM D3359), and shall meet the coating manufacturer’s technical data sheet requirements.
- 2.) Reverse Impact (ASTM D 2794, 5/8” [16 mm] ball): 3000X metal thickness (expressed in inch-pounds) for referenced steel materials in section 2.02 A of this specification, or 1500X metal thickness for aluminum; no tape-off (ASTM D3359), and shall meet the coating manufacturer’s technical data sheet requirements.

Accelerated Environmental Tests

Corrosion Resistance

1. Salt Spray (ASTM B 117):, taped top edge and at least one vertical edge, leaving drip edge exposed; Record time to white rust and time to red rust. After 1000 hours evaluate creep at scribe (ASTM D1654) and cut edges. 8F maximum, blistering in the field of the test panel (rated per ASTM D 1654)
Performance must be equal or better than the control material.
2. Humidity Resistance (ASTM D 2247 or D 1735): (1000 hours) evaluate for blistering, cracking, creepage, or corrosion. (rated per ASTM D1654) Performance must be equal or

better than the control material.

3. Prohesion Test (ASTM G85 – Appendix -5): Record number of cycles to white rust and to red rust. Performance must be equal or better than the control material.

Exterior Weathering Properties

(All exposed edges except the top edge which is protected by clamping arrangement)

- 45° South exposure in coastal Florida environment exposed at a latitude between 25°N and 30° N or equivalent.
- 5° South exposure in an acid rain environment (ATLAS – Jacksonville, FL):

1.) 5 years real-time exposure.

- Rate blistering in field using rated per ASTM D 1654
- Record scribe (ASTM D1654) creepage and corrosion
- Record edge creepage and corrosion
- Record white rust and/or red rust corrosion or stain at formed and unformed areas

Performance must be equal or better than the control material. Control material must comply with Metal Construction Association Certified Standard Paintedl™ provisions.

Back Coat

Backer systems for hot-dipped galvanized steel, aluminum-zinc coated steel, and 5% aluminum-zinc coated steel, as referenced in Section 2.02 A, shall meet the coating manufacturer's technical data sheet requirements.

Unpainted Products

Test samples of new substrates intended to be used in an unpainted condition must be evaluated in triplicates with accelerated corrosion tests and outdoor exposures, as outlined below. All new substrates being evaluated must show unpainted performance compared to a control material of unpainted AZ55 55%Al-Zn coated steel. (Acrylic coated) The control material must comply with Metal Construction Association Certified Natural ™ provisions

All test panels must include:

- 3-T bend
- 5/8 “ reverse impact

Accelerated Corrosion Tests

- Salt Spray (ASTM B 117): taped top edge and at least one vertical edge, leaving drip edge exposed; Record % red rust after 500 hrs, 1000 hrs and 2000 hrs . Photography of panels required. Performance must be equal or better than the control material
- Stack Test: all edges exposed; Record white or black rust formation up to 500 hours. Performance must be equal or better than the control material.

Exterior Weathering Properties

(All exposed edges except the top edge which is protected by clamping arrangement)

- 45° South exposure in coastal Florida environment exposed at a latitude between 25°N and 30° N or equivalent.
 - 5° South exposure in an acid rain environment (ATLAS – Jacksonville, FL):
- 1.) 5 years real-time exposure.
 - Record white, black or red rust in field and on formed area
 - Record edge creepage and corrosion

Performance must be equal or better than the control material. Control material must comply with Metal Construction Association Certified Natural™ provisions.

Mills or manufacturers of the new substrates are responsible for the testing required as described in this protocol. All results shall be reported to the Metal Construction Association for their evaluation.

Appendix A

Requirements for Quality Control Program Reference Table

Paint or Coating Manufacturer

Requirement	Section/Page Number(s) where Item is Addressed in Quality Manual	Auditor: Does Quality Control Program Comply with Requirements?
Must have a Quality Control Manual or equivalent		
Documented approval of Quality Control program by an approved, independent agency and describing changes to the Quality Control Program.		
There should be clear indication through working documents, review of materials, and interviews that the guidelines of the Quality Control program are being followed in practice.		
Valid agreement with a qualified quality control inspection agency for annual reviews of Quality Control procedures		
If an audit has previously been conducted, review the results of the audit and corrective actions to ensure that prior deficiencies as would relate to the Metal Construction Association Certification program have been corrected.		
Documented ordering practices for resins and pigments that are ultimately used in MCA approvable coatings are in place.		
Documented procedures to ensure that incoming materials comply with stated standards consistent with MCA guide specifications for residential roofing are in place.		
Documented procedures for control and/or change of the design of a product		
Documented procedures for in-situ adjustments made to process		
Documentation of test panels' identification and duration of exposure at weathering farm(s) used to generate data for outdoor weathering performance		
Documented procedures for the review and testing of weathering panels to ensure that the requirements for self certification are based upon solid, current data.		
Documented weathering panel results shall include the ability to differentiate laboratory produced panels from production panels.		
A description of the method by which coatings used in Metal Construction Association certified roofing products can be ultimately traced back to the batch numbers of raw materials of coatings, specifically those of resins and pigments.		
Documented procedures to insure that only final product conforming coatings are used in the manufacturing of Metal Construction Association certified roofing.		
A table of products of the coating manufacturer, including trade names, Metal Construction Association performance categories, and MCA approval numbers for which Metal Construction Association Certification Program approval has been given must be available.		

Signature of auditor

date

In the event of non-compliance, see attached comments.

Appendix B
Reference Table for Quality Control Program Auditor
Roofing Product Manufacturer

Requirement	Section/Page Number(s) where Item is Addressed in Quality Manual	Auditor: Does Quality Control Program Comply with Requirements?
Must have a Quality Control Manual or equivalent	N/A	
Documented approval of Quality Control program by an approved, independent agency and describing changes to the Quality Control Program.		
There should be clear indication through working documents, review of materials and interviews that the guidelines of the Quality Control Program are being followed in practice.		
Valid agreement with a qualified quality control inspection agency for annual reviews of Quality Control procedures		
If an audit has previously been conducted, review the results of that audit and corrective actions to ensure that prior deficiencies as would relate to the Metal Construction Association Certification Program have been corrected.		
Documented ordering practices for substrates and coatings that are consistent with Metal Construction Association roofing product certification.		
Documented procedures to ensure that incoming materials comply with the MCA Guide Specification for Metal Residential Roofing		
With a certification issued at least annually, the responsible parties for the coating process of materials used in the Metal Construction Association Certified Roofing Program must attest that all of the specific MCA requirements are being met.		
Incoming materials must include specific information regarding purchase order identification and physical properties as outlined in the MCA guidelines.		
If incoming inspection or testing is part of the roofing manufacturers Quality Practice, all testing equipment used to verify incoming compliance with the MCA guidelines shall comply with calibration and standards traceability.		
Description of the method by which roofing products can be traced to inspection and production records for substrates, paint finishes and coatings		
Documented procedures to guarantee that roofing products manufactured from non-conforming materials are not labeled with the Metal Construction Association label		
Table of roofing products, substrates, paint or coating trade names, paint or coating supplier's Metal Construction Association approval numbers, and MCA performance categories, as applicable, for which Metal Construction Association Certification Program approval has been granted.		
Documented procedures for labeling Metal Construction Association certified metal roofing products		
Documented procedures to insure that labeled Metal Construction Association Certified Approved products are distributed or resold only under parameters noted in the MCA Memorandum of Understanding.		
Documented procedures for displaying the Metal Construction Association certification program logo		
Statement in the Quality Control Manual that only roofing products that comply with Metal Construction Association performance requirements will be labeled		

Signature of auditor

date

In the event of non-compliance, see attached comments.