



MEBAC[®]

Slip Resistant Metal Surfaces

HARSCO
INDUSTRIAL
IKG

What is MEBAC?

As you would expect from “The First Family in Industrial Flooring Products,” Harsco Industrial - IKG’s Mebac slip resistant surfaces are manufactured to provide the absolute BEST in safety products. Produced using a proprietary arc spray process, we provide a BEST IN CLASS slip resistant surface that is uniform and extremely durable.

Unlike other anti-slip coatings, MEBAC surfaces are not made up of tape, resin or paint. Instead molten metal is sprayed onto the required metal surface and a grit media, available in different sizes for different applications, is then encapsulated with additional coats of the molten metal.

MEBAC surfaces have been used for over three decades worldwide and are produced at our EPA compliant facility in Leeds, Alabama. MEBAC is available through our nationwide network of sales and representative offices.

Importance of Coefficient of Friction

MEBAC meets or exceeds these requirements to provide a safe flooring option.

A coefficient of friction factor of .50 is considered by OSHA to be a safe surface on which to perform work. The American Disabilities Act suggests a factor of .60 for a flat surface and .80 for an inclined surface.

The most common industrial accident



MEBAC is an acronym:

- **M**etal
- **B**onded
- **A**nti-slip
- **C**oating

Co-efficient of Friction Test results for anti slip products

Product:	Dry	Wet	Oil
Mebac #1	>1.0	>.99	0.76
Mebac #3	>1.0	>1.0	0.70
Mebac #4	>1.0	>1.0	0.49
<i>Slip Not</i>	1.0	1.0	n/a
<i>Al Grip</i>	0.99	0.93	n/a
<i>Check plate</i>	0.60	0.54	n/a

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MEBAC 1



One of the original MEBAC products, MEBAC #1 offers the greatest durability and the most aggressive slip resistant surface in the MEBAC family of coatings. It utilizes the highest concentration of aluminum oxide grit.

Used where superior slip resistance is required, it is available in both our carbon steel and aluminum coatings.

Steel MEBAC 3



MEBAC #3 is the coating of choice in high traffic areas where a slightly less aggressive surface is desired. MEBAC #3 is the product of choice when the finished product will be galvanized.

Available only in the steel MEBAC coating.

MEBAC 4



MEBAC #4 coating has a smaller grit particle that is ideal for areas that may be exposed to bare feet, such as swimming pools and leisure areas. This size particle provides long lasting durability expected from MEBAC coatings and is also easy to clean.

The MEBAC #4 coating is available in either our steel or aluminum coating.

EZ Weld



EZ Weld is available in aluminum, carbon steel or stainless steel arc sprays.

Manufactured without grit particles, EZ Weld provides our least aggressive surface. Designed for moderate traffic areas that not only require a durable slip resistant surface, EZ Weld also considers the ergonomics of a work place. It is an ideal surface for food processing facilities, or other applications where the degree of slip resistance required is minimal.

Stainless Steel MEBAC

Stainless steel MEBAC coatings are available for specialized applications. Important considerations in deciding whether to utilize this type of coating will be the longer lead times to be expected with this custom-made product, and significantly higher costs.

MEBAC® Advantages

Safety

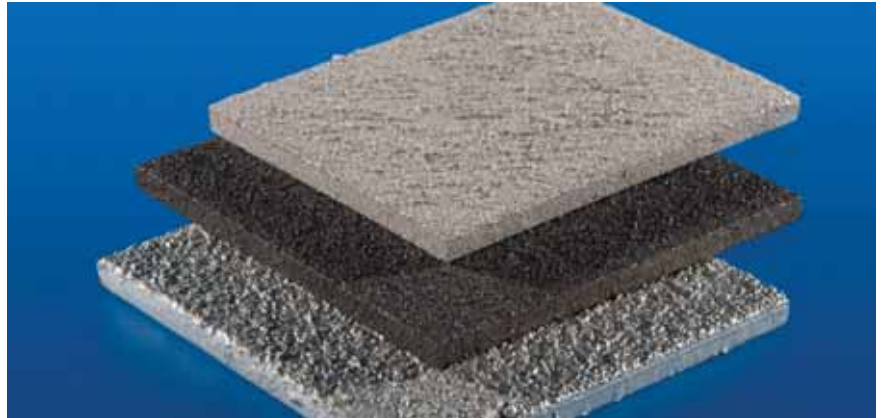
The most important advantage should always be safety! No other product can exceed MEBAC's consistently high results for coefficient of friction under a wide range of conditions.

Even when subjected to water and lubricants, the MEBAC surface meets OSHA's standards for a safe working surface. Why would you want employees or the public walking on any other safety surface?

Economy

Although the initial in-place cost of the MEBAC may be somewhat higher than other types of anti-slip surfaces, it is most economical for the life cycle of the product.

Over the product's lifetime, MEBAC does not incur additional labor and material costs for the reapplications necessary with most other products. MEBAC also reduces potential indirect costs or expenses incurred by the end users when there are slip/fall accidents, lost man hours and equipment down time.



Fabrication flexibility

MEBAC coatings can be applied either before or after fabrication of metal components.

However, it is recommended that whenever possible, bending or forming of substrate should take place before applying MEBAC. Also, when holes, cut-outs or attachments are performed on plain plate, they yield a higher quality, lower cost and avoid the excessive tool wearing, uneven cut abrasive edges and scrap that can occur on a surface that already has a MEBAC coating on it.

Fabrication after MEBAC is applied is feasible and the fabrication tips on page 6 of this catalog offer practical guidance if post-coating fabrication is required.

Availability

Harsco Industrial IKG's MEBAC production cycle is short enough that manufacturing lead times rarely exceed three weeks for standard material, and are more commonly between one to two weeks depending on shop cycle time.



Marina application



High Co-efficient of Friction



Durability

MEBAC's durability is the result of bonding and exceptional wear resistance. Since the aluminum oxide grit particles are an even harder substance than the metal arc spray encapsulating it, any eventual wear of the metal surface simply serves to expose an even tougher wearing material.

Strength

Although MEBAC surfaces have no load carrying capacity of their own, tests have shown that a MEBAC surface acts in composite with the metal substrate. Nevertheless, our plate thickness dimensions do not include the thickness of the MEBAC.



MEBAC treads at Daytona International Speedway

As MEBAC can be applied to virtually any steel or aluminum substrate chosen by the customer, the design engineer has maximum

flexibility in selecting the optimum components to complete the required job, where installations can utilize standard plate.

Technical Data

Uniformity

Other abrasive metals processes are unable to control grit dispersion, resulting in some surface areas with too much grit and some with little or none. MEBAC's unique manufacturing process yields a consistently uniform grit pattern.

Tested Bond Strength

Steel coating to surface
5,582 PSI

Aluminum coating to surface
5,911 PSI

Surface Buildup (added weight to substrate)

Steel = .89# / sf

Aluminum = .36# / sf

Tolerances

Stock sheet sized material =
Standard mill tolerances will
apply (generally slightly
oversized)

Fabricated Plates =
+ / - 1/8" width and length,
and 1/4" square

Fire Resistance

Mil C-11346A. 47.4

	Specified	Actual
Ignition Plus Combustion Time (min.)	4.25 Max	0

Average Char. (in.)	6.00 Max	0
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Food Approval

FDA approved and USDA
approved (aluminum EZ weld)

UL Classified

Classified as slip resistant by
Underwriters Laboratories

Limitations

- MEBAC is applied to horizontal surfaces only.
- Maximum width of coated material = 60"
- Maximum length of coated material = 240"
- Maximum height of coated material = 8"



MEBAC® Anti-Skid Plate

Applied to Carbon Steel/Aluminum/Stainless Plate

MEBAC Floor Plates are available in standard sizes listed below, and also available in a variety of other sizes upon request. Contact us for advice and assistance with your standard plate requirements. Please note that all standard size plates are furnished with mill tolerances as to length, width and squareness.

If MEBAC steel plates are to be galvanized by anyone other than Harsco Industrial IKG, please ensure you review our "Galvanizing Guidelines", which can be downloaded at: www.mebac.com.

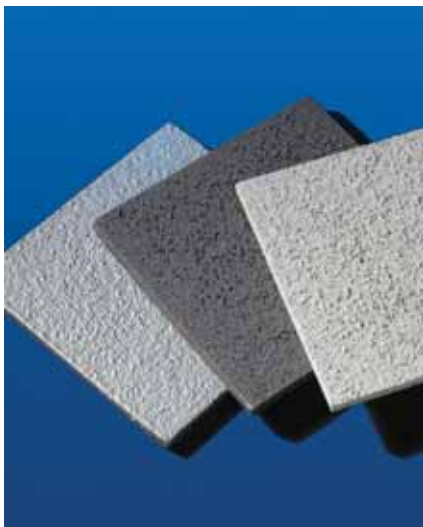
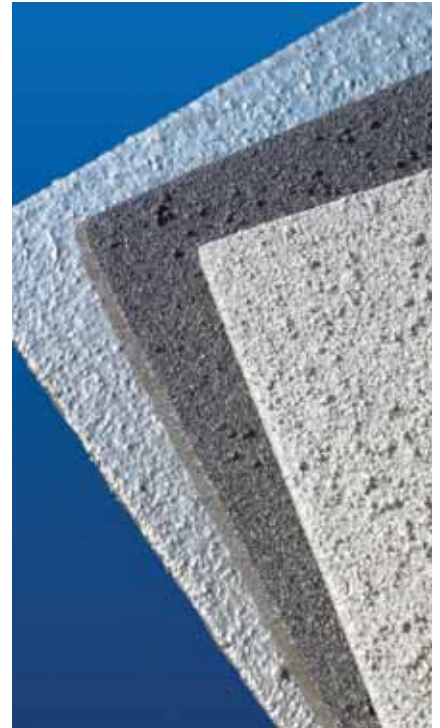
Standard MEBAC plate sizes

Carbon steel plate comes in the following standard sizes:

- Thicknesses : $\frac{1}{8}$ ", $\frac{1}{4}$ ", $\frac{3}{8}$ ", and $\frac{1}{2}$ "
- Other thicknesses and sizes of plate are available, please contact MEBAC sales.
- Mill tolerances apply and are generally slightly oversized.

Aluminum 5052-H32 is regular aluminum plate and comes in the following standard sizes:

- 48" x 144" and 60" x 120"
- Thickness : $\frac{1}{4}$ "
- Other thicknesses and sizes of plate are available, please contact MEBAC sales.
- Mill tolerances apply and usually are +/- $\frac{1}{8}$ " on width and length and $\frac{1}{4}$ " on square.
- Other alloys are available, please contact MEBAC sales.



Considerations

- If specific tolerance dimensions are required where plates will be laid side-by-side, or where tighter tolerances are needed than mill offerings, please advise us to ensure satisfactory fit-up.
- Mill finish Carbon Steel MEBAC will rust if exposed to moisture. IKG recommends that a quality rust inhibitive coating be applied to the applied MEBAC to protect the surface from such rust.

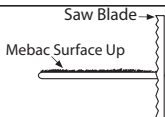
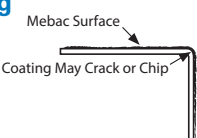
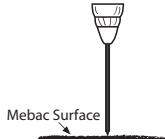


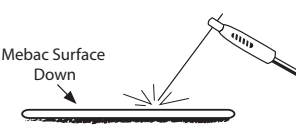

MEBAC Manufacturing criteria

- Maximum width of coated material 60"
- Maximum length of coated material 240"
- Maximum height of coated material 8"



MEBAC® Fabrication Tips

A major advantage of MEBAC Surfaces is that they can be applied to customer supplied material after fabrication. For circumstances where fabrication prior to surfacing is impractical, we offer the information below.

	Aluminum on Aluminum	Aluminum on Steel	Steel on Steel
Sawing 	Sawing is best accomplished by using abrasive wheels on radial, chop or cut-off saws. Carbide blades give good results when used with cold saws, bands saws or jig saws. Climb cutting is advised.		
Bending 	It is recommended that outside bends be made prior to coating. Bending after the MEBAC process is possible, however, mirror cracking or chipping may occur (unless area was masked prior to MEBAC process).		Because of the low elastic limit of the finished surface, outside bends should be made prior to coating.
Drilling 	Drilling may be done from either the coated or uncoated side. Sintered carbide drills are recommended. Drill speed should reflect approximately 50% reduction when drilling through the coated side. Once the coating has been penetrated, normal feed rates and speeds recommended by the drill manufacturer apply.		
Flame Cutting 	Conventional methods of torch cutting have been used to cut MEBAC coated products. Plasma cutting is strongly recommended, however. Flame cutting from the coated side is recommended.		
Press Working 	MEBAC coated products can be sheared, notched, blanked or stamped. The abrasive surface should be placed toward the moving press member. Covering the abrasive surface with carrier board saves wear on tooling.		
Welding 	For cosmetic purposes, it is recommended that welding be performed on the uncoated side. Care should be taken when welding on the coated surface.	Weld on uncoated steel side only.	For cosmetic purposes, it is recommended that welding be performed on the uncoated side. Care should be taken when welding on the coated surface.
Beveling 	May be flame, shaper, planer, or ground to a beveled edge.		
Galvanizing	N/A	Plate can be pre-galvanized prior to application of Aluminum MEBAC coating. Cannot be galvanized after coating.	Can be galvanized after MEBAC is applied to plate. However, care must be taken by galvanizer ¼" thick may warp. See note on page 4. Test samples are recommended. Plate may also be pre-galvanized. MEBAC coated then a zinc – based paint applied to MEBAC surface.

Although we believe the above to be accurate and practical, we offer this data only as a service and can assume no liability in regard to its use.



MEBAC® Custom Fabrication Plates

MEBAC Custom Fabricated Plate Products

MEBAC® coatings, as a valuable part of any slip and fall loss prevention program, are available on your choice of substrates, fabricated to your exact specific plans and specifications.

Send us your structural steel drawings or dimensioned sketches and we will custom-fabricate to your requirement.

Fabrication offered includes :

- Shearing
- Plate bending
- Cut-to-size holes
- Forming
- Beveling
- Plasma cutting
- Punched plate
- Welded attachments



All fabrication is prior to the application of MEBAC. IKG recommends that a quality rust inhibitive coating be applied after application of Mill Finished Steel MEBAC to protect the surface from rusting.

MEBAC surfaced Customer Materials

Ship us your fabricated parts, new or used, prior to installation. Harsco Industrial IKG applies MEBAC anti-slip coating products to all types of customer furnished materials, with applications ranging from lift platforms and expansion joint covers, to hotel stairways and stadium concession stand floors.

If your existing flooring is removable and in piece sizes under 60" in width, 240" in length and under 8" in height, simply clean your flooring material of existing finishes, contaminants and lubricants, ship the material to our plant and we'll apply your choice of MEBAC coating and ship the finished product back.

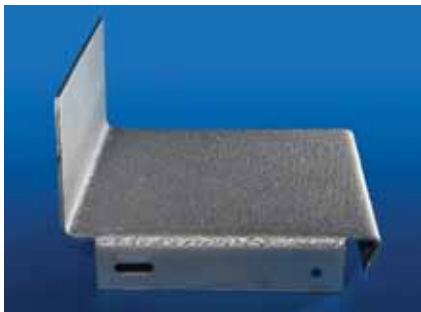
If you are an original equipment manufacturer or a contractor renovating or building a new floor and want to fabricate the substrate yourself, we can simply apply your choice of MEBAC slip-resistant surface to your material.

Send us your substrate. We would love to coat it!



MEBAC® stair treads and stair tread covers are available in a wide range of types and dimensions. Combining the superior slip resistance coatings of MEBAC with flexibility in design, our tread solutions can solve your slip-resistance challenges for both new installations and renovation conditions.

Available in bar grating, plate, aluminum plank or our patented Z-Treads (see below), our anti-slip treads are custom fabricated to meet your job specifications and offer easy installation.



For more information on our full range of MEBAC welded steel and aluminum bar grating treads, their available sizes and specifications, please visit our website at www.MEBAC.com.

MEBAC® Z-Treads

MEBAC Z-Treads offer a fast, economical way to design and construct a steel staircase with built-in, long term slip resistance. The benefits don't stop there – the simplicity and versatility of our Z-Treads allow fast, easy field installation that saves time and money.

Their clean, one-piece design provides a slip resistant walking surface with the mounting plates, nosing and riser as a single piece of steel. There are no welds or cracks to rust over time.

Usually fabricated in $\frac{3}{16}$ " Steel, with steel MEBAC #3 walking surface, Z-Treads are available in standard 36", 44" and 48" widths. (Additional sizes available upon request.)

Supplied in mill finish or galvanized to ASTM A-123. MEBAC Z-Treads meet or exceed BOCA, UBC and OSHA standard loading requirements. Call us for help on how to specify your MEBAC Z-Treads.



MEBAC® Nosings

See opposite page for details

We offer a full range of versatile MEBAC extruded aluminum nosings, for both new construction and renovation, and for either concrete or metal stair treads. MEBAC Nosings are economical, have superior coefficient of friction for slip resistance under wet or dry conditions, and have a high strength to weight ratio.

MEBAC Nosings

Aluminum Embedment Nosings are made with a durable 1/4" thick extrusion to guard against impact cracking. Cost effective and suitable for stair treads in new construction, Embedment Nosings can be used in poured in place, pan type or terrazzo stairs. Embedment Nosing are furnished in lengths up to 20' and are available in 3" and 4" widths in three different styles. Type 'A' & 'C' Nosings ship with EZ-anchors - countersunk holes with bolt, nut and wing anchor are available at additional cost.

Renovation Nosings are specially designed with a unique tapered rear edge to alleviate the potential trip hazard of conventional nosings. They are easy to install for almost all types of retrofit applications.

Renovation Nosings are furnished in lengths up to 20' and come in widths of 3-3/4" and 7" with countersunk holes for easy field installation. Type "RS-3.75" and "RS-7" ship with countersunk holes only.

MEBAC Surfaced Rungs and Rung Covers

Whether on construction sites, in factories or on offshore platforms, ladders are one place where slips tend to have extreme consequences. For new construction, MEBAC Ladder Rungs are the answer. For retrofitting existing ladders, utilize our easy-to-install MEBAC Rung Covers, which provide the same measure of safety afforded by regular MEBAC Ladder Rungs with minimum installation time.

Both Rungs and Rung Covers are available in 3/4" and 1" sizes.

Rungs are steel MEBAC #1 on a mill finish carbon bar and can be cut-to-length or shipped in 10' lengths.

Rung Covers are aluminum MEBAC #1 on a pre-galvanized carbon steel substrate, and are also offered as cut-to-length pieces or shipped in standard 10' lengths.



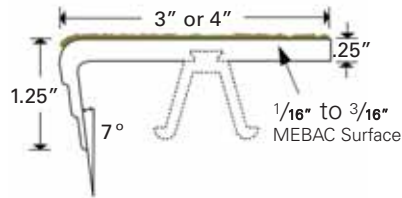
How to Specify MEBAC® Nosings

"Stair nosing shall be IKG MEBAC nosing type _____, as manufactured by Harsco Industrial IKG. The nosing shall consist of extruded 6063 aluminum alloy with factory applied MEBAC - aluminum oxide grit encapsulated with molten aluminum. Finish to be _____, and furnished with _____ (IKG extruded component anchors) for permanent embedment or (drilled countersunk holes) for fastening nosing to embedment clips for easy removal or replacement."

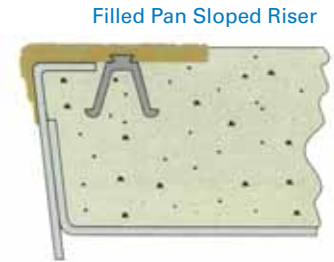


MEBAC® Aluminum Nosings

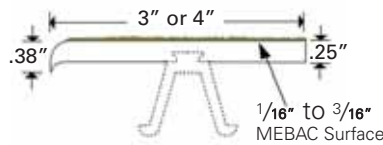
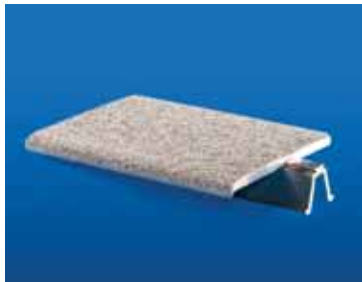
- TYPE A-3C
- TYPE A-4C
- TYPE A-3E
- TYPE A-4E



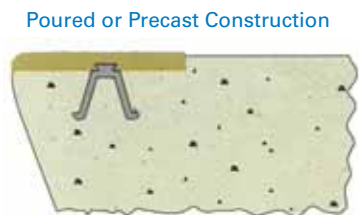
.250 in. 6063 aluminum with $\frac{1}{16}$ to $\frac{3}{16}$ in. integral grit MEBAC metalized surface only. Vertical leg (face) is bare aluminum.



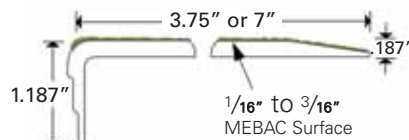
- TYPE C-3C
- TYPE C-4C
- TYPE C-3E
- TYPE C-4E



.250 in. 6063 aluminum with $\frac{1}{16}$ to $\frac{3}{16}$ in. integral grit MEBAC metalized surface.

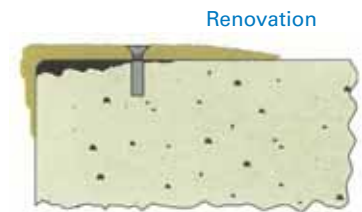


- TYPE RS 3.75
or RS-7



.187 in. 6063 aluminum with $\frac{1}{16}$ to $\frac{3}{16}$ in. integral grit MEBAC metalized surface on top surface only. Vertical leg (face) is bare aluminum.

Supplied with countersunk holes only



C = Countersunk $\frac{5}{16}$ hole
E = EZ Anchor



Manufacturing Facilities

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