

STAINLESS STEEL DATA SHEET



"THE SOURCE" FOR SPECIALTY METAL FINISHES

VIBRATION

PRODUCT DESCRIPTION:

Vibration is a multi-directional finish. It is also known by the names Non-Directional Satin and Angel Hair. Vibration has a uniform texture with random, multi-directional grit lines. To ensure the highest degree of consistency, it is inspected to a visual standard. It is designed for architectural uses, including those that are cosmetically demanding. Vibration can be used on wall panels, elevator cabs, coping, and trim. Can be coated with anti-fingerprint coating for interior use.



SELECTING THE GRADE

Vibration's performance depends on selecting the correct grade. Type 304 is sufficient for preventing corrosion in most environments. For most locations near the seacoast, Type 316 should be selected. For materials that will be welded, select low carbon versions of these grades (304L / 316L). See Table I for highlights of chemical analyses and properties. For extreme locations, such as near chemical plants or where steel may come into contact with salt water spray, different alloys will be required, subject to application review.

POUNDS PER PIECE

Thickness (in.) x Width (in.) x Length (in.) x .292

AVAILABLE SIZES

See Table II. Coil widths. Inquire for length.

TYPICAL SURFACE CHARACTERISTICS

| | |
|----|------|
| Ra | 5-15 |
|----|------|

FIRE RESISTANCE

Should a fire occur, Vibration provides additional protection as stainless steel has a melting point of 2750° F.

FLATNESS

Vibration is supplied to standard commercial allowances of ASTM (American Society for the Testing of Materials).

FABRICATION

Stainless steel can be welded or soldered. Preferably, use a grade of welding wire more noble than the work piece. Through use of shield gasses, formation of a heat tint scale may be avoided in lighter gauges. When scale does form, care must be taken to remove this scale through mechanical or chemical means. There is no need to orient panels in relation to the rolling

direction as Vibration is non-directional. Still, to avoid the possible result of slight directional differences, we suggest panels be fabricated to maintain the alignment of the original sheet. After soldering, flux residue must be thoroughly removed. To repair Vibration, use the finest abrasive medium possible applied to an orbital sander that will address the work piece. Follow up with progressively finer media, until the desired blend is achieved.

INSTALLATION

Vibration comes with a protective PVC covering that is high grade UV resistant and is designed to withstand the elements for several weeks. Yet it is recommended that this PVC covering be removed immediately after installation to prevent adhesive residue from adhering to the stainless steel finish. Vibration's appearance is very uniform, but any metal surface, including a painted one, is sensitive to misalignment of panels on differing planes. Please take extra care to install within reasonable tolerances to ensure full benefit of Vibration's unvarying appearance. After installation, any rust stains from tools or construction debris must be removed.

MAINTENANCE

Vibration is designed to be essentially maintenance free. It will last for decades without requiring attention. Yet it may be appropriate at times to clean the surface in order to maintain its original appearance. Specific stainless steel agents are widely available. For general cleaning, any detergent or ammonia solution is effective. Also, for stains, a sodium carbonate paste with a warm water rinse can be applied. For severe stains, you may use tri-sodium phosphate and caustic soda solutions. More difficult contaminants, like adhesive residue, will come off with pure acetone. Always avoid products containing chloride. Regularly clean out areas where occasional debris may collect, such as gutters.

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| Table I | | 304/304L | 316/316L |
|--|-------------|-------------|-------------|
| CHEMICAL ANALYSIS | | | |
| Nickel | | 8% | 10% |
| Chromium | | 18% | 16% |
| Molybdenum | | | 2% |
| TYPICAL MECHANICAL PROPERTIES | | | |
| Yield Strength (psi) | | 50,000 | 50,000 |
| Tensile Strength (psi) | | 96,000 | 92,000 |
| Elongation in 2 inches | | 50% | 48% |
| Hardness (Rockwell B) | | 85 | 84 |
| PHYSICAL PROPERTIES | | | |
| Density (lb./cu. in.) | | 0.292 | 0.292 |
| Modulus of Elasticity in Tension (X 10 ⁶ lb./sq.in.) | | 28.0 | 28.0 |
| Mean Coefficient of Thermal Expansion per °F (x 10 ⁻⁶) | 32 - 212°F | 9.6 | 8.9 |
| | 32 - 600°F | 9.9 | 9.0 |
| | 32 - 1000°F | 10.2 | 9.7 |
| Melting Point Range °F | | 2550 - 2650 | 2500 - 2550 |

| Table II | Size Range (inches) | | | | |
|--------------|---------------------|---------|---------|----------|----------|
| | WIDTH | | | | |
| THICKNESS | .75 - 18 | >18 <24 | 24 - 36 | >36 - 48 | >48 - 60 |
| .135 - .500 | • | • | • | • | • |
| .075 - 1250 | • | • | • | • | • |
| .0291 - .075 | • | • | • | • | • |
| .0178 - 029 | • | • | • | • | • |
| .015 - .0177 | | | | | |

LIMITED WARRANTY

Mirror Metals (MM) warrants its ASTM Grades 304, 304L, 316, 316L products against corrosion for a period of thirty (30) years from the date of purchase, subject to the limitations described in this warranty and provided the material is utilized solely for architectural applications and in normal atmospheric conditions. For purposes of this warranty, corrosion is defined as through wall penetration of the stainless steel. No warranty is made regarding mechanical damage, physical damage, or damage as a result of substandard workmanship after receipt of the product from MM (including but not limited to welding, shaping, or forming using methods that are not best practices for stainless steel of the grade in question) or using inappropriate cleaning solutions. This warranty does not cover any product that has been subject to misuses, neglect or accident. Use in chemical or manufacturing facilities, which produce or use chemicals known to have a deleterious effect on stainless steel, is excluded from this warranty. Please contact MM prior to purchase if there is any question regarding application.

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