



DIAMOND SAW BLADES MGS-90-01H

1.0 DESCRIPTION. This specification covers professional grade segmented diamond saw blades of various diameters to fit concrete saws.

2.0 MATERIALS.

2.1 General. Diamond saw blades shall be of the type designated in the bid request, designed for use in cutting, sawing, or grooving the following pavements. In addition to normal manufacturing labeling, all blades shall be mechanically stamped or engraved with the year manufactured, country of origin including "USA" or "United States of America" when manufactured in the U.S.A., and color coded for type of blade as noted.

2.1.1 Type I. Type I shall be for use in steel reinforced Portland cement concrete containing limestone aggregate and color-coded white.

2.1.2 Type II. Type II shall be for use in steel reinforced Portland cement concrete containing siliceous gravel aggregate and color-coded blue.

2.1.3 Type III. Type III shall be for use in asphalt pavement and color-coded black.

2.2 Blade Blank (Core). The blades shall be slotted, heat treated and tensioned, new and unused steel, and run true when used in accordance with the manufacturer's recommendation for operating rpm. The blades shall be of a quality that will resist warping, bending, splitting or cracking. The blades shall have the standard arbor and drive pinholes as required for the specified blade diameter.

2.3 Blade Segments.

2.3.1 The total diamond bearing segment length shall be a minimum of 85 percent of the finished blade circumference. The individual diamond segments shall be permanently secured or bonded to the blade core by laser welding or silver soldering. The design of the blade and segment shall be such as to permit complete wearing and full use of the diamond concentrations forming the cutting edges, with slots for flushing material cuttings.

2.3.1.1 The diamond bearing segments without the mounting backer, if used, shall have a width of 0.187 ± 0.015 inches or 0.325 ± 0.015 inches or 0.375 ± 0.015 inches as specified in the bid request and a minimum depth of 0.375 inch.

2.3.1.2 The segment's matrix hardness shall be the manufacturer's standard metallurgical bond for the type of blade specified. The matrix shall be designed for the proper cutting ability for the blade type specified. This design information (type of aggregate, etc.) will be furnished upon request after the bid award but prior to delivery to the designated shipping locations.

2.3.2 Segment diamonds shall be 100% virgin synthetic diamonds certified to a minimum quality grade of General Electric MBS 950 Series. The segment diamonds shall be within the 30-40 and 40-50 mesh size of ANSI code B74.16 with no more than 8% retained on the 30 and no more than 8% passing the 50.

2.3.2.1 The recoverable diamond concentration in the segments shall be a minimum of 42 %, based on the standard of 72 carats per cubic inch of diamond bearing volume as equaling 100%



concentration. The diamonds shall be distributed uniformly throughout the depth and length of each segment to provide uniform wear for the life of the blade.

3.0 TESTING. Two blades will be selected at random of each size and type ordered and tested for compliance with this specification and in accordance with the following methods. The blades selected for testing will be returned to the supplier for repair or replacement at no additional cost.

3.1 Diamond Size. The diamonds removed will be sieved to determine conformance with the size requirements.

3.2 Diamond Content. The bond will be dissolved and the diamonds will be weighed to determine compliance with the recoverable diamond concentration requirements.

3.3 Segment Dimensions. The segments will be measured for compliance with the segment length, width and depth requirements.

4.0 ACCEPTANCE.

4.1 The supplier shall furnish to the engineer a manufacturer's certification for each shipment showing specific test results complying with the material and quality requirements of these specifications for each type of blade being furnished.

4.2 Acceptance of the blades will be based on a satisfactory manufacturer's certification and tests performed by the engineer.

4.3 If any of the requirements and/or specifications are not met, all blades covered by the purchase order will be subject to rejection.

5.0 PACKAGING AND MARKING. Unless otherwise stated, normal commercial packaging and packing will be acceptable. All packing shall be adequate to protect contents from damage. Shipping containers shall be marked to show contents, name of vendor, agency, and purchase order number, and the country of origin including "USA" or "United States of America" when manufactured in the U.S.A.

6.0 DELIVERY. Failure to comply with quoted delivery schedule may result in cancellation of order or forfeiture of a performance bond.

7.0 WARRANTY. The supplier agrees to replace or repair any blades free of any charge if the laser weld bond fails between the segment and the core during the useful life of the blade, or if the silver solder bond fails between the segment and the core within the first .050 inches of segment wear, depending on which type of blade is furnished. The supplier agrees to replace any blade that cracks or warps as a result of material defects during the initial 25% of the blade life.

7.1 This warranty is not intended to cover abuse to or misapplication of the blade.

8.0 ORDERING.

8.1 Blades are to be ordered by type, inches of diameter and width of blade.

8.2 The blades require inspection and acceptance by Materials at destination, prior to use.



CERTIFICATION STATEMENT
DIAMOND SAW BLADES

State Materials Engineer
P. O. Box 270
Jefferson City, Missouri 65102

Dear Sir:

We hereby certify that the diamond saw blades described below comply with all requirements of Specification [MGS-90-01H](#) and in accordance with Bid Request No. _____.

The following blades manufactured by _____ are covered by this certification.

Purchase Order No.	Destination	Quantity & Size	Shipping Date

Following are results of test performed on these blades:

Chemical Composition Hardness _____
Percent C _____
Percent Mn _____ Weight Per Linear Foot _____
Percent P _____
Percent S _____ Certified By: _____

Title: _____

Date: _____

Results of tests may be shown on attachments rather than on this form, if preferred.

This form is to be completed, signed, and submitted in triplicate for each shipment, at the same time as blades are shipped. A shipment is defined as all blades represented on one certification and shipped on one date, regardless of various destinations.

