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Trizact™ Diamond Tile 677XA

Technical Data Sheet

September 2003

Product Description A structured, fixed abrasive composite pad consisting of an inorganic abrasive (vitreous diamond agglomerates) in an organic binder (cross-linked polymer) capable of lapping a multitude of substrates on varied equipment and processes.

Key Features

- Eliminates messy slurries
- Produces superior surface finish to slurry
- Reduces overall process time
- Reduces waste disposal costs
- Eliminates lap plate replacement
- Fits on any lapping machine

Grades and Sizes

- Available in 3, 6 and 9 micron grades and includes PSA backing.
- Manufactured to any shape, with any hole size and hole configuration.
- For discs or sheets smaller than 9", specify 3M™ Trizact™ Diamond Tile 677XA
- For discs or sheets greater than 9", specify 3M™ Trizact™ Diamond Tile 677XA Type PC. Polycarbonate backing adds rigidity to larger discs.
- For discs or sheets greater than 9" and less than 47", 3M™ Trizact™ Diamond Tile 677XA Type PC pads will come in one piece.
- For discs or sheets greater than 47", 3M™ Trizact™ Diamond Tile 677XA Type PC pads will come in four pieces.

Grade Selection Grade selection is based on material type and process requirements. The smallest micron grade that will give stable cut rate for a given material is recommended. Using the smallest possible micron grade will result in a finer rough lap finish, reducing polish time by up to 50%.

Equipment Trizact™ Diamond Tile 677XA is designed to work with double and single sided lapping machines and can be directly mounted on most plate material types or geometry.

Directions for Use Reference the following Technical Application Bulletins for detailed information on use of Trizact™ Diamond Tile 677XA:

- Machine Prep and Pad Mounting Instructions
- Lubricant Use and Filtering Instructions
- Pad Conditioning Instructions
- Frequently Asked Questions

Typical Performance Characteristics

Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

Average Material Removal and Finish					
Grade	Borofloat™ Glass	Pyrex® Glass	BK7 Glass	Fused Quartz	Window Glass
3 micron	58 µm/min <i>Ra = 1575 Å</i> <i>Rt = 1.408 µm</i>	55 µm/min <i>Ra = 1625 Å</i> <i>Rt = 1.545 µm</i>	22 µm/min <i>Ra = 1629 Å</i> <i>Rt = 1.455 µm</i>	58 µm/min <i>Ra = 657 Å</i> <i>Rt = 0.6437 µm</i>	n/a
6 micron	105 µm/min <i>Ra = 2352 Å</i> <i>Rt = 2.169 µm</i>	115 µm/min <i>Ra = 2495 Å</i> <i>Rt = 2.316 µm</i>	76 µm/min <i>Ra = 2531 Å</i> <i>Rt = 2.284 µm</i>	69 µm/min <i>Ra = 951 Å</i> <i>Rt = 0.9865 µm</i>	43 µm/min** <i>Ra = 2814 Å</i> <i>Rt = 2.503 µm</i>
9 micron	181 µm/min <i>Ra = 3035 Å</i> <i>Rt = 2.580 µm</i>	165 µm/min <i>Ra = 3152 Å</i> <i>Rt = 2.827 µm</i>	105 µm/min <i>Ra = 3842 Å</i> <i>Rt = 3.429 µm</i>	89 µm/min <i>Ra = 1336 Å</i> <i>Rt = 1.0792 µm</i>	72 µm/min** <i>Ra = 3499 Å</i> <i>Rt = 3.061 µm</i>

Double sided lapping on Peter Wolters AC 500 machine.
 2 psi, 96 rpm, 200 ml/min flow rate, 5% Sabrelube® 9016 in water
 5 minute cycles, ten 65mm diameter substrates
 * Data is an average of four 1.1mm scans with a 0.25µm tip radius and 250 µm cut off
 ** 10% Sabrelube® 9016 in water

Storage

Pads should be stored flat, in a clean environment. Stacking up to 8 pads, or pad segments, is acceptable. Do not store pads on edge.

FOR ADDITIONAL INFORMATION: To request additional product information or to arrange for sales assistance, call 1-800-251-8634. Address correspondence to: 3M Industrial Business Customer Response Center, Building 21-1W-10, 900 Bush Avenue, St. Paul, MN 55106. Our fax number is 651-733-9175. In Canada, phone: 1-800-364-3577. In Puerto Rico, phone: 1-787-750-3000. In Mexico, phone: 52-70-04-00.

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