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Technical Data | November 2023

# 3M™ Diamond Lapping Films Series 600X

## Product Description

3M™ Diamond Lapping Films Series 600X are comprised of tightly graded diamond mineral that is uniformly coated on a polyester film backing, which helps enable long lapping film life with an excellent finish throughout the life of the product. Most films are available with or without pressure sensitive adhesive (PSA) backing.

3M™ Diamond Lapping Film 661X and 668X cut and polish hard ceramic ferrules and glass fibers at the equivalent polish rates and to the same surface level. These films are typically used to add radius to ferrule connectors or to refine the ferrule surface finish in preparation for the final polish.

3M™ Diamond Lapping Film 661XU and 668XU are constructed with a tightly graded diamond mineral that is precision coated on a polyester film backing for a more uniform visual appearance. This durable construction provides consistent results throughout the life of the product.

3M™ Diamond Lapping Film 662XW and 666XW are for radius and leveling operations that require added durability. These films use a thicker diamond coating with a higher diamond concentration and tougher resin for an increased cutting rate and longer life. The 3M films 662XW and 666XW typically last 2 to 3 times longer compared to standard films.

3M™ Diamond Lapping Film 660XV, new in 2023, is the most durable film in 3M's Diamond Lapping Film product family. It combines a high cut rate with a great finish, long life and is used on slower RPM polishing machines.

3M™ Diamond Lapping Film 676XW is for single side flat lapping of rowbars. These films use a thicker diamond coating with a higher diamond concentration and a tougher resin for an increased cut rate and longer life.

## Applications

Fiber optic connector polishing, flat lapping and superfinishing. Common substrates include ceramics, glass, stone, carbide, composites, exotic alloys and other hard materials.

## Key Features

- Produces excellent surface finish
- Efficient polishing can help reduce overall process time
- Precise polishing can help produce higher yields
- Slurry not required
- Stable construction to help provide consistent results throughout life of product
- Multiple product options available at each grade size to optimize performance needed
- Used in many applications and on a multitude of machines

# 3M™ Diamond Lapping Films 600X Series

## Product Construction/Material Description

Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes. Not all products are available in all grades, backings or mineral sizes.

| Product ID (plain back) | Product ID (PSA back) | Backing Thickness | Resin Type |
|---|---|---|---|
| 660XV | n/a | 3 mil | Softer, tougher resin system with higher diamond content |
| 661X | 668X | 3 mil | Standard |
| 661XU | 668XU | 3 mil | Standard |
| 662XW | 666XW | 3 mil | Softer, tougher resin system with higher diamond content |
| 663X | 664X | 3 mil | Hardest resin |
| n/a | 676XY | 5mil | Softer, tougher resin system with higher diamond content |

## Converted Forms

- Sheets, discs and rolls.
- Maximum width 12 inches.

## Backing

- Polyester film.Nominal thickness options are 3 mil and 5 mil.

## Product Grade Color Guide

| Micron Grade (nominal) | Color |
|---|---|
| 0.1 | Green |
| 0.25 | Cream |
| 0.5 | White |
| 1.0 | Lavender |
| 1.5 | Light Green |
| 3.0 | Pink |
| 6.0 | Brown |
| 9.0 | Blue |
| 15.0 | Orange |
| 20.0 | Burgundy |
| 30.0 | Green |
| 45.0 | Amber |
| 60.0 | Amber |

## Bonding Resins

- 3M™ Diamond Lapping Films 661X/668X and 661XU/668XU: Standard resin
- 3M™ Diamond Lapping Films 660XV, 662XW/666XW: Softer, tougher resin system with higher diamond content
- 3M™ Diamond Lapping Films 663X/664X: Hardest resin in this Series

# 3M™ Diamond Lapping Films 600X Series

## Storage and Shelf Life

The shelf life of 3M™ Diamond Lapping Films 600X Series with plain back (631X, 641X, 651x, 660XV, 661X, 661XU, 662XW and 663X) is 5 years from the date of manufacture when stored in the original packaging materials and stored at 10°C - 30° C (50°F - 86°F) and 30-60% relative humidity.

The shelf life of 3M™ Diamond Lapping Films 600X Series with PSA back (668X, 676XY, 666XW and 664X) is 24 months from the date of manufacture when stored in the original packaging materials and stored at 10°C - 30° C (50°F - 86°F) and 30-60% relative humidity.

## Certificate of Analysis (COA)

The 3M Certificate of Analysis (COA) for this product is established when the product is manufactured and deemed commercially available from 3M. The COA contains references to the 3M specifications, test method names, and test results for the product's performance attributes that the product will be supplied against. Contact your local 3M representative for this product's COA.

**Safety Data Sheet:** Consult Safety Data Sheet before use.

**Regulatory:** For regulatory information about this product, contact your 3M representative.

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