

# ADHESIVE SELECTOR GUIDE FOR SIGN ASSEMBLY

Lord® Engineered Adhesives offer advantages over welding and mechanical fastening. They bond dissimilar materials, provide improved appearance, insulate against galvanic corrosion, and offer excellent environmental resistance. Adhesive bonding provides cost savings due to reduced labor costs and assembly time.

The chart below is a guide to choosing the proper adhesive for sign bonding applications. For more information on these adhesives and surface preparation, see the following pages.

SUBSTRATE CLASS	SUBSTRATE TRADENAME*	SUBSTRATE SUPPLIER	SUBSTRATE PREP	LORD ADHESIVE
Acrylic Sheet	Acrylite® FF	CYRO Industries	Scuff	Lord 406/19, 7545, or 7542
	Acrylite® SG	CYRO Industries	Scuff	Lord 406/19, 7545, or 7542
	Acrysteel® IGP	Aristech	Scuff	Lord 406/19, 7545, or 7542
	Aristech® GPA	Aristech	Scuff	Lord 406/19, 7545, or 7542
	Duraplex® SG-05	Plaskolite	Scuff	Lord 406/19, 7545, or 7542
	Duraplex® SG-10	Plaskolite	Scuff	Lord 406/19, 7545, or 7542
	Implex®	AtoHaas	Scuff	Lord 406/19, 7545, or 7542
	Implex® Plus	AtoHaas	Scuff	Lord 406/19, 7545, or 7542
	Optix® SG	Plaskolite	Scuff	Lord 406/19, 7545, or 7542
	Plexiglas® G	AtoHaas	Scuff	Lord 406/19, 7545, or 7542
	Plexiglas® MC	AtoHaas	Scuff	Lord 406/19, 7545, or 7542
Plexiglas® Q	AtoHaas	Scuff	Lord 406/19, 7545, or 7542	
Aluminum	-	-	DRW	Lord 406/19, 403/19 or 410/19
Painted Aluminum	AlumaCorr®	Nudo Products	Scuff	Lord 406/19, 7545, or 7542
	Alumalite™	Laminators Inc.	DRW/Scuff	Lord 406/19, 7545, or 7542
	DiBond®	Alusuisse Composites	DRW	Lord 406/19 or 7610
	Econolite™	Laminators Inc.	DRW/Scuff	Lord 406/19, 7545, or 7542
Nu-Alum®	Nudo Products	Scuff	Lord 406/19	
Paper/Foam Board	Foam-X®	Alusuisse Composites	DRW	Lord 7545, 7542, or 7610
	Last-A-Foam®	General Plastics Mfg. Co.	DRW	Lord 7545, 7542, 320/322 or 7660
	Sign Foam II®	Sign Arts Products Corp.	DRW	Lord 7545, 7542, 320/322 or 7660
PETG Sheet	Spectar® PETG	Eastman	DRW	Lord 406/19, 7545, or 7542
Polycarbonate Sheet	Lexan®	General Electric	DRW	Lord 7550A/C (cosmetic/non-structural)
	Tuffac™ A	AtoHaas	DRW	Lord 406/19, 7545, or 7542
	Tuffac™ XL	AtoHaas	DRW	Lord 406/19, 7545, or 7542
Polystyrene Sheet	Sintrex®	Alusuisse Composites	DRW	Lord 406/19, 7545, 7542, or 7610
Polystyrene Foam Board	GatorFoam®	International Paper Co.	DRW	Lord 7545, 7542, 7660, or 7610
	GatorBlanks®	International Paper Co.	DRW	Lord 7545, 7542, 7660, or 7610
Expanded PVC/Foam Board	Sintra®	Alusuisse Composites	DRW	Lord 406/19, 7545, 7542, or 7610
Vinyl Laminate	White-Wood®	Nudo Products	DRW/Scuff	Lord 7545, 7542 or 406/19
Trimcap	Jewelite®	Wagner	DRW	Lord 7545, 7542, or 7550A/C (cosmetic/non-structural)
Urethane Foam	Precision Board®	Coastal Enterprise Co.	DRW	Lord 7545, 7542, 320/322, or 7660
	Last-A-Foam®	General Plastics Mfg. Co.	DRW	Lord 7545, 7542, 320/322, or 7660
	Sign Foam II®	Sign Arts Products Corp.	DRW	Lord 7545, 7542, 320/322, or 7660
Ceramic/Stone	-	-	DRW	Lord 320/322
Wood	-	-	DRW	Lord 7545, 7542, 7660, or 7610

**NOTE:** "DRW" means dry rag wipe. This preparation process simply cleans dust from a surface. "Scuff" means to use an abrasive pad to lightly rub the surface of the substrate. This roughens the surface a little, improving adhesion.

Each substrate and adhesive should be tested for the specific use in which it will be expected to perform. The information reported here is from laboratory studies and is intended only to provide general information regarding the ability of material to be bonded with Lord Engineered Adhesives.

Other substrates or grades of substrates from these and other suppliers may not have been evaluated for adhesion. If you have need to bond a substrate that is not on this list, call your substrate supplier or Lord Corporation @ 1.800.458.0434. x-3277.

\*All substrate tradenames are trademarks or registered trademarks of the substrate supplier, except: Acrysteel & Aristech are registered trademarks of Aristech Acrylics, LLC; Implex and Plexiglas are registered trademarks of Rohm and Haas Co.; Sintrex is a registered trademark of Lonza, Inc.; Sintra is a registered trademark of Lonza, AG; Jewelite is a registered trademark of Wagner Zip Change; SignFoam II is a registered trademark of Sign-Arts Products Corp.; Last-A-Foam is a registered trademark of General Plastics Mfg. Company; Acrylite is a registered trademark of CYRO Industries, Inc.; Duraplex is a trademark of Plaskolite, Inc.; Optix is a registered trademark of Plaskolite, Inc.

	Aluminum/Steel*	Painted Metal	Poly-carbonate*	Acrylic*	Trimcap	Urethane Foam	PVC Foam Board	Ceramic/Stone	Wood
Aluminum/Steel*	406/19 403/19 410/19	406/19 403/19 410/19	406/19 403/19 410/19	406/19 403/19 410/19	406/19 403/19 410/19	N/A	403/19 406/19 410/19	320/322	N/A
Painted Metal	406/19 403/19 410/19	406/19 403/19 410/19	7542 7545 7610	7542 7545 7610	7550 <sup>N</sup> 7556 <sup>N</sup>	7542 7545 7660	320/322 7542 7545 7660 7610	320/322	7542 7545 7660
Poly-carbonate*	406/19 403/19 410/19	7542 7545 7610	7542 7545 7610	7542 7545 7610	7550 <sup>N</sup> 7556 <sup>N</sup>	7542 7545 7660	320/322 7542 7545 7660 7610	7542	7542 7545 7660
Acrylic*	406/19 403/19 410/19	7542 7545 7610	7542 7545 7610	7542 7545	7550 <sup>N</sup> 7556 <sup>N</sup>	7542 7545 7660	320/322 7542 7545 7660 7610	320/322	7542 7545 7660
Trimcap	406/19 403/19 410/19	7550 <sup>N</sup> 7556 <sup>N</sup>	7550 <sup>N</sup> 7556 <sup>N</sup>	7550 <sup>N</sup> 7556 <sup>N</sup>	7550 <sup>N</sup> 7556 <sup>N</sup>	7542 7545 7550 <sup>N</sup>	320/322 7542 7545 7660 7610	N/A	7542 7545 7550 <sup>N</sup>
Urethane Foam	N/A	7542 7545 7660	7542 7545 7660	7542 7545 7660	7542 7545 7550 <sup>N</sup>	7542 7545 7660 7610	320/322 7542 7545 7660 7610	320/322	7542 7545 7660 7610
PVC Foam Board	406/19 403/19 410/19	320/322 7542 7545 7660 7610	320/322 7542 7545 7660 7610	320/322 7542 7545 7660 7610	320/322 7542 7545 7660 7610	320/322 7542 7545 7660 7610	320/322 7542 7545 7660 7610	320/322 7542 7545 7660 7610	320/322 7542 7545 7660 7610
Ceramic/Stone	320/322	320/322	7542	320/322	N/A	320/322	320/322 7542 7545 7660 7610	320/322 360	320/322
Wood	N/A	7542 7545 7660	7542 7545 7660	7542 7545 7660	7542 7545 7550 <sup>N</sup>	7542 7545 7660	320/322 7542 7545 7660 7610	320/322	7542 7545 7660 7610

Lord 403/19, 406/19, 410/19, 7542 and 7545 are available in a range of work times. Refer to Lord Product Bulletin for additional details.  
N - For non-structural bonding (assemblies where adhesive is used for aesthetic attachment in min-stress areas).  
\* Coefficient of thermal expansion is a major consideration when cross-bonding these substrates.

# Lord Engineered Adhesives

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Product	Applications	Working Time*	Handling Time*	Product	Full Cure*	Sag Resistance	Comments
Lord 403/19	Unprepared metals and all plastics.	Very fast - 2 to 4 minutes	6 to 8 minutes	Lord 403/19	1 hour	Non-sag	Fast room temperature bond with no surface preparation.
Lord 406/19	Same as 403/19 with longer work time.	Fast - 6 to 10 minutes	15 to 20 minutes	Lord 406/19	4 hours	Non-sag	Longer work time than Lord 403/19.
Lord 410/19	Same as 406/19 with longer work time.	Medium - 25 to 45 minutes	1 to 2 hours	Lord 410/19	8 to 10 hours	Non-sag	Longer work time than Lord 406/19.
Lord 7542 A/B	Plastics, prepared metals, SMC, FRP, and foam.	Fast - 4 to 5 minutes	1 to 2 hours	Lord 7542 A/B	8 to 10 hours (15 to 30 minutes @ 60°C/140°F)	Non-sag	Odorless; nonflammable; cost effective; flexible. Can be heat accelerated.
Lord 7542 A/E	FRP, SMC, other plastics and prepared metals.	Medium - 30 to 60 minutes	6 to 8 hours	Lord 7542 A/E	24 hours (60 to 90 minutes @ 82°C/180°F)	Non-sag	Greater work time than Lord 7542 A/B.
Lord 7545 A/B	FRP, SMC, other thermoset plastics and prepared metals.	Fast - 3 to 5 minutes	30 minutes	Lord 7545 A/B	24 hours (15 to 30 minutes @ 82°C/180°F)	Easy to dispense Non-sag	Designed specifically for hand held cartridges.
Lord 7545 A/F	FRP, SMC, other thermoset plastics and prepared metals.	Medium - 45 to 65 minutes	4 to 5 hours	Lord 7545 A/F	24 hours (60 to 90 minutes @ 82°C/180°F)	Easy to dispense Non-sag	Designed specifically for hand held cartridges.
Lord 7550 A/C	Trimcap, plastics, other non-structural applications.	Fast - 3 to 5 minutes	15 to 30 minutes	Lord 7550 A/C	24 hours	Self Leveling	Clear. Fast room temperature bonding. Odorless; nonflammable; flexible. Can be heat accelerated.
Lord 7556 A/B	Trimcap, plastics, other non-structural applications.	Very Fast - 1 to 1 1/2 minutes	4 to 8 minutes	Lord 7556 A/B	1 hour	Non-sag	Translucent. Very fast room temperature bonding. Odorless; nonflammable; flexible. Can be heat accelerated.
Lord 7610	Wood, fabrics, and metals, especially pre-coated metals.	Medium - 30 to 60 minutes	6 to 12 hours	Lord 7610	72 hours	Non-sag	Single component sealant/adhesive.
Lord 7660	Plastics and prepared metals; laminating and trim components.	Medium - 30 to 60 minutes	24 hours	Lord 7660	72 hours	Brushable and sprayable	One part cross-linking structural adhesive. Provides initial tack for fixturing.
Lord 320/322	SMC, FRP, primed metals, rubber, foam, ceramic, stone, and other thermoset plastics.	Medium - 30 to 60 minutes	2 - 5 hours	Lord 320/322	24 hours	Non-sag	Rubber toughened, heat resistant.

\*working time, handling time, and full cure are typical at 24°C (75°F).

## Surface Preparation for Plastics, FRP, and SMC

- A dry rag wipe is recommended for all plastic and composite surfaces. Use a clean, dry cloth to remove loose contamination.
- For plastics, mechanical abrasion is recommended. Use grit blast, sand blast, grinding, sanding, or abrasive pad scuff. Each of these processes removes dry contamination while increasing the surface area for improved mechanical adhesion. Some surfaces may only require an abrasive pad scuff. A solvent wipe before and after mechanical abrasion is usually required.
- For ABS, acrylic, polycarbonate surfaces, use only isopropyl alcohol (IPA). Other solvents may attack the plastic and weaken it.
- For PVC and vinyl surfaces, use methyl ethyl ketone (MEK) or acetone for removing plasticizers from the surface.
- Extremely difficult to bond plastics can be bonded using Lord primers and surface modifiers.

## Surface Preparation for Metals

- A dry rag wipe is recommended for all metal surfaces. Use a clean, dry cloth to remove loose contamination.
- Lord 403/19, 406/19, and 410/19 adhesives will bond aluminum and most other metals with a simple dry rag wipe. Where gross contamination is present, prepare metal surfaces for bonding by wiping with acetone or isopropyl alcohol. Gasoline, toluene, xylene, or mineral spirits are not recommended because they may leave a residue.
- Lord 7542, 7545, 7550A/C, 7660, 7610, and 320/322 adhesives require the use of metal surface primers after solvent cleaning and before bonding. Contact your Lord representative for a primer recommendation.

## Cautionary Information

Before using this or any other Lord product refer to the Material Safety Data Sheet (MSDS) and label for safe use and handling.

For additional information, call Lord Corporation at 1.800.458.0434 extension 3277. FAX 814.864.3452. Lord Corporation, Chemical Products, 2000 West Grandview Blvd., P.O. Box 10038, Erie, PA 16514-0038. On the web at [www.lordadhesives.com](http://www.lordadhesives.com)

Values stated in this bulletin represent typical values as not all tests are run on each lot of material produced. For formalized product specifications for specific product end uses, contact the Customer Service Department.

Information provided herein is based upon tests believed to be reliable. Inasmuch as Lord Corporation has no control over the manner in which others may use this information, it does not guarantee the results to be obtained. In addition, Lord Corporation does not guarantee the performance of the product or the results obtained from the use of the product or this information where the product has been repackaged by any third party including but not limited to any product end user. Nor does the company make any express or implied warranty of merchantability, or fitness for a particular purpose concerning the effects or results of such use.

**LORD** Engineered Adhesives