

TECH-BOND™ TPO SPRAY ADHESIVE

DESCRIPTION:

TECH-Bond™ TPO Spray Adhesive (“adhesive”) is a low-volatile organic compound (“LVOC”) solvent-based adhesive applied via a self-contained spray system. The adhesive provides excellent adhesion of non-fleece Duro-TECH™ TPO membranes and flashings to approved substrates in both horizontal and vertical applications.

The adhesive may be used on the following substrates, after they have been properly prepared, as described in the Duro-TECH TPO Adhered Roofing Systems specification:

- Structural Concrete (poured in place or precast)
- Lightweight Structural Concrete
- Lightweight Insulating Concrete
- Wood (plywood, OSB, or lumber)
- Polyisocyanurate (“ISO”) Insulation Boards
- Duro-Guard® Cover Boards
- Duro-Last® Vapor Barrier
- Duro-Last® Torch-Down Vapor Barrier

The installing contractor is responsible for following all applicable building, plumbing and electrical codes.

ORDERING:

Adhesive canisters and accessories are ordered separately.

- TECH-Bond TPO Spray Adhesive canister (Item #11028T)
- Spray gun (for parapet application) (Item #11023-111T)
- Spray gun with extension (for deck application) (Item #11023T)
- 60° spray tip (5-pack) (Item #11027T)
- Hoses
 - 12-foot (3.7-m) (Item #11025T)
 - 18-foot (5.5-m) (Item #11024T)



STORAGE AND HANDLING:

- Store canister tightly closed without gun/hose assembly attached in a cool, dry, well-ventilated area, between 60° – 80° F (16° – 47° C).
- Do not allow canister temperature to exceed 110° F (43° C).
- For best results, use partially dispensed adhesive canisters within 60 days.

SHELF LIFE:

- Shelf life is one year in an unopened canister, from date of manufacture printed on the canister, when following these recommended storage procedures.

PRECAUTIONS:

- **WARNING: EXTREMELY FLAMMABLE**
Keep away from heat / sparks / open flames / hot surfaces. **Do not smoke while applying.**
- Keep away from ignition sources.
- Do not sit or stand on cartons or canisters.
- Do not expose product to open flame or temperatures above 110° F (43° C)
- Read Safety Data Sheets (“SDS”) prior to using.

COVERAGE RATES		
Surface	Finished Coverage	
	Per Canister	Per 100 ft ² (9.3 m ²)
Deck or Parapet (Two-Sided Application)	1,000 ft ² (92.9 m ²)	0.1 canister

- Wear proper personal protective equipment (“PPE”), such as gloves and eye protection, per the SDS. **Goggles (glasses), gloves, and impervious clothing are required.**
- Avoid breathing vapors. Spray in well-ventilated areas.
- Close canister valves when not in use.
- Keep canisters in upright position while dispensing adhesive.
- Product not intended for use with poly (vinyl chloride) (“PVC”) membranes.

TECH-BOND TPO SPRAY ADHESIVE PROPERTIES		
	Test Method	Results
Base	–	Synthetic Polymers
Color	–	Clear to hazy amber yellow
Viscosity	ASTM D2196	50 – 200 cPs at 68° F (20° C)
Density	ASTM D1875	7.05 – 7.22 lb/gal (0.85 – 0.87 kg/L)
VOC Content	–	< 250 g/L (< 2.1 lb/gal)
Prop 65		
WARNING! This product can expose you to chemicals which are known to the State of California to cause cancer. For more information, go to www.P65Warnings.ca.gov .		

INSTALLATION:

1. General

- Apply to surfaces which are clean, smooth, dry and free of oil and grease.
- Only apply adhesive when the ambient temperature is at least 40° F (5° C) and rising.
- Do not apply if the canister temperature has fallen below 70° F (21° C). Canisters and contents must be brought to 70 – 90° F (21 – 32° C) prior to application.
- Always keep the canister in an upright position. Attempting to dispense adhesive when the canister is horizontal or upside down will cause reduced coverage rates.
- Do not apply adhesive where hot-air welding will be performed.
- Do not allow adhesive to contact expanded polystyrene (“EPS”) or extruded polystyrene (“XPS”). Damage to EPS and XPS will occur. Squeegees must not be used when EPS or XPS are within the roofing system.

2. Deck and Parapet Application

- Prior to use, shake canister for 30 seconds to agitate contents that may have settled.
- Using the included 9/16-inch (14-mm) wrench and being careful to avoid cross-threading, connect the hose to the spray gun and canister valve outlet.



Hose to spray gun connection



Hose to canister connection

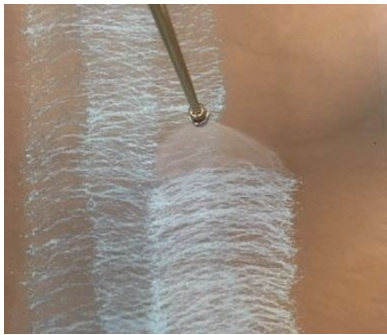
- Slowly turn the canister valve ON (counterclockwise rotation) and check for leaks at each attachment of the canister, hose and spray gun. Initially, open the canister valve halfway. Use caution not to strip or overtighten any connection points.

IMPORTANT Once turned ON, Duro-Last best practice is to leave the canister ON until fully evacuated. Leaving the canister ON will ensure the hose is kept under pressure and thus the adhesive will remain in a fluid state. Turn the spray gun control wheel (picture below) to the off position to prevent accidental spray. Fully evacuate the hose and spray gun assembly and clean it accordingly before storage. Refer to the CLEANUP section for cleaning instructions.



Spray gun control wheel adjustment

- d. Spray the adhesive perpendicular to the substrate with a 50% overlap pattern from approximately 12 inches (305 mm) distance. Porous substrates may require an additional pass of adhesive. Select the width of your desired pattern using the control wheel located behind the spray gun trigger. The more “open” the wheel, the wider the pattern, the more “closed”, the narrower.



50% overlap spray pattern
(Blue color is used for photo representation only.)

- e. Refer to the Duro-TECH TPO Adhered Roofing Systems specification for guidelines regarding TPO membrane installation.

OPEN TIME AND TESTING FOR FLASH OFF

1. Allow both coated surfaces to dry (solvent flashes off within 3 – 5 minutes depending upon climate conditions) until adhesive does not transfer to finger or knuckle when touched.
2. Within 30 minutes of adhesive being dry to the touch (while using gloves) – **not tacky**, contact bond the surfaces together with adequate pressure. The longer the surfaces are “open”, the more pressure is required to achieve desired bonds. If left exposed too long, beyond 30 minutes, reapply a new light coat of adhesive to 1 surface and repeat process. The adhesive will yield full bond strength after approximately 24 hours of curing at 70° F (21° C). Curing time will vary depending on ambient temperature and humidity.

3. Roll the TPO membrane into the substrate while avoiding wrinkles. Smooth with hand or lightly broom the entire surface to ensure there are no wrinkles or air pockets, then apply as much uniform pressure as possible across the entirety of the bonded surface with a clean J-roller (for parapet/flashings) or 100-pound (45.36 kg) linoleum roller (for deck) to achieve maximum contact. Any area that does not receive adequate pressure has the potential to yield a **false bond** and could lead to **unacceptable or undesirable bonds**.

TESTING FOR ADHESION:

After surfaces have been bonded and rolled, check the adhesion by peeling back the edge of the TPO membrane. Adhesive should not release from either surface. An acceptable initial bond will exhibit “legging/stringing” of adhesive from both surfaces (picture below). If legging/stringing does not occur, reapply a new light coat of adhesive to one surface and repeat each step.



Acceptable adhesive “legging/stringing”

TRANSFERRING HOSE AND SPRAY GUN TO A NEW CANISTER:

When the canister is empty, close the valve on the canister and depressurize the hose by holding the spray gun trigger. Remove the hose from the old canister and attach to a new canister. Refer to the DISPOSAL OF EMPTY CANISTER section for handling of empty canisters.

CLEANUP:

Acetone or MEK can be used to clean tools and surfaces. If the spray gun valve becomes stuck, attach the hose and spray gun to a canister of TECH-Bond Spray Adhesive Cleaner and trigger spray gun repeatedly until operation is smooth. If the spray gun is clogged, a small-gauge wire or torch clean-out tool is helpful after soaking the brass tip/fitting with Acetone or MEK. Always empty cleaners and waste materials into a bucket and dispose properly. Never allow cleaners or waste materials to contact roofing materials.

DISPOSAL OF EMPTY CANISTER

Once the canister is fully exhausted of adhesive, follow these instructions for proper disposal:

1. During product disposal, wear appropriate PPE and maintain proper ventilation per the SDS.
2. Empty canisters completely of any remaining material.
3. Turn empty canister upside down and open valve completely to relieve any remaining pressure.
4. Locate and puncture the rupture plug on the side of the empty, depressurized canister using a brass punch and hammer.



Location of rupture plug

5. Mark as "EMPTY".



Canister marked "EMPTY"

6. Recycle or dispose of empty canister in accordance with all applicable local, state, and federal regulations. Do not burn empty canisters.
7. Add oil absorbent to waste components. Dispose of all waste in an approved landfill.

TROUBLESHOOTING

Problem	Possible Cause	Remedy
Poor Spray Pattern	<ul style="list-style-type: none"> • Wrong hose • Adhesive too cold • Partially opened canister valve • Wrong or dirty tip • Canister on its side • Settling of canister contents 	<ul style="list-style-type: none"> • Use hose provided by Duro-Last • Adhesive will perform best above 70 °F (21° C) • Fully open canister valve • Install clean 60° spray tip • Stand canister upright • Shake canister for 30 seconds to agitate contents
Collapsing or Sputtering Pattern	<ul style="list-style-type: none"> • Wrong hose • Adhesive too cold • Canister on its side 	<ul style="list-style-type: none"> • Use hose provided by Duro-Last • Adhesive will perform best above 70 °F (21° C) • Stand canister upright
Outside Edge Tracking of Pattern	<ul style="list-style-type: none"> • Wrong or dirty tip • Improper spray gun adjustment • Settling of canister contents 	<ul style="list-style-type: none"> • Install clean 60° spray tip • Adjust pattern width with spray gun control wheel • Shake canister for 30 seconds to agitate contents
Canister Will Not Spray Anything	<ul style="list-style-type: none"> • Canister is empty • Restricted or clogged tip • Restricted or clogged hose • Defective canister 	<ul style="list-style-type: none"> • Replace canister • Install clean 60° spray tip • Disconnect hose, spray canister into a bucket, if adhesive sprays from canister, replace or clean hose • Call Duro-Last at 800-248-0280
Canister Will Spray Only Propellant	<ul style="list-style-type: none"> • Canister on its side • Canister is empty • Defective canister 	<ul style="list-style-type: none"> • Stand canister upright • Residual propellant remaining in canister, replace canister • If Adhesive remains in canister, call Duro-Last at 800-248-0280
Poor Bond Strength	<ul style="list-style-type: none"> • Bond has not reached full strength • Adhesive trapped in bond line • Substrate contaminated • Insufficient adhesive applied • Lack of pressure applied • Open time exceeded • Substrate too cold • Adhesive too cold 	<ul style="list-style-type: none"> • Full bond strength will develop within 24 hours • Be sure adhesive has flashed prior to bonding TPO membrane to substrate • Ensure substrate is clean • TPO Membrane and substrate must have at least 85% coverage with a 50% overlap of each fan pattern pass • Apply consistent and uniform pressure to TPO membrane and substrate • If open time exceeds 40 – 60 minutes, depending on ambient temperature and humidity, apply a fresh coat of adhesive to at least one surface • Wait for substrate temperature to be at least 40° F (5° C) and rising • Ensure canister is stored between 70° – 90° F (21° – 32° C), rotate cold canisters out for warm canisters