



Tool Box Safety Talk No. 7

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Propane Torching Equipment

Propane torching equipment for adhering modified bitumen membrane is comprised of a propane storage cylinder, a gas regulator, gas delivery hose and a hand held propane torch assembly with an attached metal stand. Torch welding equipment must be regularly inspected and maintained to operate safely. When torching modified bitumen membranes a good working knowledge of propane, propane cylinders and hand held torching equipment combined with proper storage, good house keeping and fire prevention awareness provides a balanced safety environment.

Propane Cylinders

Propane is an invisible gas and is heavier than air. Propane is always stored as a liquid and burned as a gas. Depending on the propane burner type, storage cylinders may be vapour or liquid withdrawal type. Propane cylinders are identified by their cylinder valves. Vapour withdrawal cylinders use a cylinder valve fitting with an internal female thread. Liquid withdrawal cylinders have a male fitting with external threads. Cylinder valves contain a safety relief that relieves excess internal cylinder pressure. Ensure the safety relief is unobstructed at all times. When not in use a safety plug shall be installed in each cylinder valve.

Propane cylinders must be stored outside at all times. Do not store propane cylinders inside for any reason. Inspect propane cylinders before use for dints and gouges, broken or missing parts. If damaged choose another propane cylinder. Store propane cylinders outside, at ground level, on a level base, in an upright position with their plastic valve plugs in place. Always secure cylinders from tipping and damage.

When moving cylinders lift them, do not roll cylinders on their sides. Do not carry propane cylinders while climbing a ladder. Hoist propane cylinders to roof level in a protective-lifting device designed for this purpose. On the roof move cylinders in a wheeled cart or trolley with the cylinder secured in an upright position. The red T.D.G. label shall be placed on the shoulder of each propane cylinder. The TDG label must be visible from outside the vehicle when transporting propane. Transportation of Dangerous Goods (T.D.G.) training is required when transporting propane by vehicle.

Handheld Torching Equipment

Handheld torching equipment includes the torch that controls and directs the flame, a regulator that adjusts the propane delivery pressure, a propane delivery hose and connectors for attaching this equipment to the propane storage cylinder valve.

The handheld torch is designed specifically for the application of modified bitumen roofing membranes. The performance of the torch assembly may only be modified by a qualified service person. If the torch assembly is not working properly take it out of service. To direct the torch flame away from the roofing system when the torch is lit but not in use, place the torch on the welded torch stand. Never use a trowel as the torch stand.

Liquid propane withdrawal systems require a different hose type than will vapour withdrawal systems. Ensure that the correct type and size of propane hose is being used for your application. Use only CSA or CGA propane hose. Inspect propane hoses for damaged fittings and connections as well as cuts and burns that may weaken the hose body. Replace damaged propane hoses, do not attempt to repair propane hoses in the field. Do not substitute radiator clamps for compression fittings at hose ends.

Never operate torch-welding equipment without a regulator for any reason. The regulator provides a constant propane delivery pressure and prevents nuisance torch flame outages or changes in the burner flame. Regulators may be adjustable with a hand wheel and pressure gauge or pre-set to a specific operating pressure during manufacture. All regulators incorporate a vent hole that must be unobstructed for proper performance. Check for a plugged regulator vent regularly and clear it as necessary. Regulators may freeze up during winter weather. Remove defective or malfunctioning regulators from service and replace with a similar unit. Regulators are one directional and the housing is marked with inlet and outlet to assist when attaching the P.O.L. cylinder connector and the hose adapter.

Tighten connectors with a properly sized wrench. Leak check all connections with a leak check solution before lighting the torch. If propane is smelled at anytime during operation check for leaks and retighten connections as necessary. To prevent burns light torches with a spark lighter, do not use cigarette lighters or matches. Check for proper torch and regulator operation by pressing the torch trigger when lit. At the end of the day disconnect the torch welding equipment and place it in a locked storage compartment. Do not leave torching equipment attached to the propane cylinder where it can be damaged, stolen or be used to start a fire or injure someone.