

Specification & Application Manual

Modified Bitumen Roofing Membranes

5.1 SAFETY

Personnel:

Wear proper clothing (including long sleeved shirt, long pants, boots and gloves). Workmen, other than the heat weld operator, should be no closer than three feet from the open flame.

Contractor:

It is the contractor's responsibility to observe all fire prevention policies and practices during the installation of the roof system.

Follow NRCA and OSHA fire protection and prevention provisions; including, but not limited to those listed in OSHA 1962., 1-50., 151., 152., 153., 1191-110 as they apply to heat weld applications. Comply with all federal, state and local regulations.

It is the employer's responsibility to train, instruct, and warn employees on the use of heat welding equipment.

Workers should use extra caution around exposed edges of insulation to prevent flame from coming into contact with any flammable material. Contact for any length of time, with lead or other materials affected by heat, should be avoided.

Do not use equipment in an enclosed area.

It is the contractor's responsibility to ensure his employees wear correct clothing: no loose garments. Long sleeves, long pants, boots and gloves are recommended.

Be familiar with NFPA S8 "Standard for the Storage & Handling of Liquefied Petroleum Gas" and appropriate Publications of the National LP Gas Association: 1301 West 22nd Street, Oak Brook, IL 60521 and the National Fire Protection Association: Batterymarch, Quincy, MA 02269.

Fire Department Regulations:

Written notice should be given to the local fire department and any necessary permits should be acquired.

The required number of fire extinguishers shall be on the roof at all times.

Install portable smoke detectors in attics as required by the fire department.

Foreman on the jobsite shall have fire safety training and shall remain on the jobsite at least one hour after the application has ended for the day to check the complete roof area and attic for any signs or smoldering or fire.

No flammable liquids shall be stored or used on the roof excluding LPG in approved containers. All LPG not in use shall be stored on the ground.

Equipment Do's:

Do use an adjustable pilot with a complete shut-off valve.

Do use a heat weld stand to direct flame upward when not in use.

Do use only hose listed for LP gas.

Do use no more than 50 feet of hose at one time. Do use an adjustable regulator with the heat weld; it should be U.L. listed.

Do keep vent in pressure regulator unobstructed at all times.

Do make sure flow of gas through regulator is in the proper direction. Directional flow is stamped on the regulator.

Do be sure that heat welding equipment is in good working order and that the cylinder valves are clean.

Propane tanks should be secured in an upright position and placed at least 10' from the open flame.

A flint or electronic lighter should be used to ignite the burner. Matches or disposable lighters are unsafe substitutes.

Should a leak occur, stop work immediately and repair all relevant parts. Do not use heat welding equipment that is leaking gas at any fitting.

Do check hoses for wear and tear and do not allow flame to come into contact with them. Heavy equipment should not be rolled over onto the hoses. Hoses should be kept free of kinks.

Should propane odor be detected, stop the heat weld immediately.

Do you know the difference between liquid and vapor gas bottles and dispensing equipment?

Do treat the heat weld as if it is always burning. On bright days it is very hard to see the flame and when working around mechanical equipment you cannot hear the heat weld.

When using a dry chemical type fire extinguisher, direct the chemical stream at the base of the fire from a safe distance of about ten to fifteen feet. Sweep the fire away from you, starting at its nearest point and moving the chemical stream toward the furthest point.

Other than the operator, workmen should stay a minimum of three feet from the flame.

Never leave a heat weld unattended.



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When shutting off the heat weld, close the propane cylinder valve first and let the remaining gas burn out of the hose before closing the heat weld valve

Do increase the size of the bottle or cylinder to keep frost from occurring.

Do secure tanks when on the roof, especially 100 lb. tanks.

Do use soap solution to test for gas leaks before lighting heat weld. Then check for proper operation of the heat weld.

Do check hoses frequently for burned or charred areas.

Do protect cylinder valves, and where possible use cylinders that have valve protection welded to the cylinder.

Do have an ABC or Halon fire extinguisher on the roof accessible to each worker using the heat weld.

Do check all equipment for wear and repair or replace as necessary.

Do be very careful when working with heat welds in areas where you cannot see. Heat the material away from the area and then apply it to the flashing.

Do protect your equipment. Store it in a toolbox.

Equipment Don'ts:

Do not operate any pressure gauge beyond the top of its scale, near excessive heat (above 150° F) or where there is excessive vibration.

Do not use equipment without an operating pressure gauge.

Do not turn a vapor cylinder on its side to increase pressure. Liquid could escape.

Do not heat a cylinder to increase pressure.

Do not try to put out a cylinder fire if it cannot be done without tipping the cylinder; let it burn and call the fire department.

Do not use matches or cigarette lighter to check for gas leaks.

Do not lift cylinder by the valve. Valve is made of soft brass and is easily cracked or broken.

Do not leave a lighted heat weld unattended.

Do not place fire extinguisher too close to LP gas equipment. If fire occurs, you will not have access to the extinguisher to put out the fire.

Do not fill gas cylinder or bottle in need of repair.

Do not lay an operating heat weld over the edge of a roof.

Do not use a trowel as a heat weld stand.

Do not lay an operating heat weld to rest on a gas cylinder. If there is a gas leak in the cylinder area there could be a fire.

Do not tighten the brass fittings too tightly with a wrench.

Do not use soda acid fire extinguisher - it spreads the flame.

Do not play with a heat weld. A flame can be hard to see on a bright day and can ignite skin or clothing instantly.

Do not use matches when igniting heat weld; use spark lighter or electronic start only.

Building Do's:

Use perlite or fiber glass cant strips if cant strips are required, and cover them with a fiber glass base sheet.

Use glass base on plywood decks, over cant strip and insulation, over any flammable surface.

Use non-combustible insulation and cover same with fiber glass base sheet.

Install metal flashings to penetrations or protect flashings with tight fitting felt collar before heat welding.

Walk the job one hour after all heat welds are out. Fires can result hours after completion of work, so the inspection time may vary depending on the size of the job and the nature of the application surface and abutments.

Make sure air conditioning units, exhaust fans, and air intake fans in the work area are shut off at the roof control.

Use a small heat weld when flashing near details.

Shield air conditioning units and other protrusions with perlite, or other similar panels, when using the heat weld around them. Heat roofing material away from air conditioning units, fans, soil pipes, and all other protrusions, and set in place while hot. Care must be taken to avoid flame being pulled into the building interior.

Feather seams around details with a hot trowel.

When heat welding at flashings, corners or voids in the roof or roof deck, never heat weld directly. Always heat weld the membrane to be applied and then adhere it to the corner or joint.

Look for any void, hole or gap and fill it with non-combustible or perlite cant strip. Cover this with fiber glass base sheet.

Use caution when heat welding near pipes in the event there is suction present. Failure to utilize the base sheet as required by the manufacturer's specifications manual is extremely hazardous as the base sheet provides a protective covering for underlying combustibles.

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Heat welding directly over polyurethane and polyisocyanurate roof insulations should be avoided. RIC/TIMA has recommended that an interim base ply or a layer of roof insulation, acceptable to the roof membrane manufacturer, be used to separate the foam roof insulation from the modified sheet and the heat weld.

Do install a base sheet over all flammable surfaces and rigid board insulation. Be sure base ply fits tightly around all deck openings and turns up parapet walls so the flame cannot flash down and start a fire underneath the deck.

Building Don'ts:

Don't heat weld anything you cannot see; do not use the heat weld in areas like under air conditioning units or behind counterflashing.

Don't heat weld directly to wood fiber cant strips.

Don't heat weld directly to wood fiber insulation.

Don't heat weld directly to any cant strip, insulation, wood or any other flammable surface.

Don't heat weld near gas lines.

Don't heat weld near electrical wires.

Don't heat weld over flammable surfaces such as EPS insulation.

Don't heat weld around flammable vents.

Don't heat weld directly to insulation.

Don't point the heat weld under rooftop equipment.

Don't point the heat weld down open roof penetrations.

Don't point the heat weld into openings around roof penetrations.

Don't point the heat weld into corners or roof edges where dried wood or fiber (such as cant strip or wood blocking) may ignite.

Don't point the heat weld at low flashings where there is an overhang and flame could get up under the counterflashing (such as around skylights or prefabricated curbs with fiberboard side wall insulation).

Heat welding equipment is made for roofing application only and should not be used for drying out a roof or as a preheater heat weld.

Never apply modified bitumen products directly over exposed conduits or pipes laying on the roof deck.

LP gas is heavier than air. Do not work in an enclosed area where gas can accumulate.

Don't lay an operating heat weld directly onto the membrane. There is danger of fire and danger of damaging the membrane.

Don't lay an operating heat weld on an open penetration on the roof. If the penetration is part of an air intake system, the flames could be sucked into the building.