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1421 Safety Guidance
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Propane Bitumen Boiler

The rules and procedures in force where people are at work may require the person responsible for this equipment to carry out a specific risk assessment.

Three types of risk that need to be controlled when using Bitumen Boilers are:

1. **Fire and explosion risk from storage and use of liquefied petroleum gas (LPG).**
2. **Risk of burning from contact with hot bitumen.**
3. **Risk of respiratory irritation from excessive inhalation of bitumen fumes.**

It is important to read this entire leaflet BEFORE using the Propane Tar Boiler

1. Plan your work and think ahead to make sure you will always be working safely.
2. Propane gas is highly flammable. Take care not to cause a fire or explosion.
3. The bitumen boiler is designed for melting bitumen products other than cut-back bitumens for weatherproofing applications in the open air including roofing work, flooring applications, road surfacing, and cable jointing.
4. Operation of this bitumen boiler can cause injury or damage if not used in a careful and controlled way. It is very heavy when full, take care when moving it.
5. If you have not used this type of equipment before, familiarise yourself with how it works and the hazards it presents before you start work.
6. You must have at least the following items of personal protective equipment: Goggles or Full Face Visor to BS EN166, Safety Boots to EN ISO 20345:2011, suitable protective work gloves, and suitable protective clothing to avoid skin contact from splashes.
7. This bitumen boiler must not be used by minors or by anyone under the influence of drugs or alcohol.
8. This bitumen boiler is designed for operation by an able bodied adult. Anyone with either temporary or permanent disability must seek expert advice before using it.

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Using the Propane Bitumen Boiler

1. No smoking.
2. Wear your protective equipment. Wear clothing and gloves to cover as much bare skin as possible.
3. Allow only essential persons to work in the area where the hot tar is used.
4. Stand the Tar Boiler on a firm level surface, which should be non-combustible and capable of carrying the load. Do not site the boiler inside a building or in an enclosed or confined space.
5. When based on the roof surface, set the boiler in a dedicated (metal) spillage tray with a greater capacity than the contents of the boiler, to contain any spillage. Set the tray on a fire resistant material.
6. Set up the gas cylinder at least 3 metres away from the boiler during use. Any additional gas cylinders should be stored at a distance from the boiler of at least 6 metres.
7. Ensure the burner assembly is located correctly and that the boiler is half filled with solid tar. Turn on the gas at the cylinder valve and carefully light the burner.
8. Heat the cold tar slowly until any water is driven off and the tar becomes liquid.
9. Do not apply direct heat to any taps, valves or pipes on the boiler to try to get it operational quicker. You will cause damage to the parts heated.
10. Do not allow water to come into contact with hot tar. Hot water and tar will be spat out.
11. Do not ladle hot tar out of the boiler, this can also cause spitting. Use the draw off tap.
12. Carry melted tar only incorrect containers, for example lidded buckets.
13. Keep the lid on the boiler at all times; replace it as soon as possible after removing it
14. Check the level and the temperature of the tar in the boiler regularly. Make sure it does not overheat or run low. Add solid tar carefully to avoid splashes.
15. Decide on the safest route for the hot tar to be carried form the boiler to the workplace.
16. Make it safer by removing any obstacles and informing people of the designated path.
17. Stop work and make safe if someone approaches you.
18. Turn the gas off at the cylinder if leaving the boiler unattended, even if it is only for a short while.
19. Do not move or transport the boiler while it is lit or while it is hot, allow it to cool down until the tar becomes solid.
20. Keep the outside of the boiler 'clean' by daily removing drips and splashes of tar.
21. If your equipment does not work properly do not attempt to repair it. Contact the hire company.

Please keep this leaflet safely as it may be required for future reference

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Before Starting Work...

SETTING UP THE WORK AREA

1. No smoking when working near liquefied petroleum gas (LPG) cylinders.
2. Make sure that your work area is clear and safe and that no-one is near to you or could distract you.
3. Protect other people from injury. Warn others to keep away, put barriers around your work area.
4. Your work area should always have at least one fire extinguisher (9 litre foam or 9kg dry powder) in an accessible place. Note: Never use water to combat a bitumen fire.
5. Always store combustible materials away from the boiler. Do not allow combustible rubbish like paper to collect near the boiler.
6. Stand the Bitumen Boiler on a firm level surface, which should be non-combustible and capable of carrying the load. Do not site the boiler inside a building or in an enclosed or confined space.
7. When based on the roof surface, set the boiler in a dedicated (metal) spillage tray with a greater capacity than the contents of the boiler, to contain any spillage. Set the tray on a fire resistant material.
8. Set up the gas cylinder at least 3 metres away from the boiler during use. Any additional gas cylinders should be stored safely at least 6 metres away from the boiler.

OPERATORS

1. The following items of personal protective equipment (PPE) are the minimum that should be worn whenever you use this bitumen boiler. Particular jobs or environments may require a higher level of protection.
2. You must wear goggles or full face visor (BS EN166) when you are working with this equipment.
3. You must wear safety boots (EN ISO 20345:2011).
4. You should wear appropriate work gloves made of durable protective material, long sleeves, and full length trousers / overalls to prevent the splashes coming into contact with your bare skin.
5. Exposure to fumes should be minimised by working, as far as reasonably practicable, on the upwind side of the hot works, and if required by wearing an appropriate face mask.
6. Anybody who is working near to you will also need to wear appropriate personal protective equipment.
7. In the work environment, people involved with hot bitumen should have received training in first aid procedures for tar/bitumen burns. Written notification of this should be clearly available on site.
8. A bucket of cold water should be kept near the work space for use only in the case of a bitumen burn.

BITUMEN BOILER

1. Check your equipment including the burner assembly, flexible hose and gas regulator. If anything is found damaged, do not use the bitumen boiler – contact the hire company.
2. Place the boiler on a firm level non-burnable surface, like concrete. Avoid finished or decorative surfaces that may be damaged by heat and bitumen splashes.
3. The boiler should be positioned so that the containers used for carrying hot bitumen will easily locate under the draw off tap.
4. Keep all gas cylinders not in use stored safely well away from the boiler. LPG is heavier than air, so cylinders should be stored in well-ventilated areas. They should not be stored where any gas could collect at a low level.
5. The cylinder in use should be located in a safe place at least 3 metres away from the boiler.
6. The flexible gas hose must be the correct type, in good condition and properly connected with the regulator fitted to the top of the cylinder using a spanner to tighten couplings. Lay this hose out carefully to avoid people and vehicles damaging it.
7. Before lighting up, the burner should be removed from under the boiler (if this is possible), lit and then replaced correctly with care. This avoids any possible build-up of gas under the boiler during the lighting process. Generally you should follow the manufacturers guidance on lighting up.
8. Make sure the bitumen boilers do not boil over. If this does occur; turn off the gas supply valve and move the gas cylinder away from the area.
9. Keep the lid on the boiler as much as possible. In the case of a boiler fire, close the lid immediately, then turn off the gas supply valve and move the gas cylinder away from the area.
10. Add bitumen carefully, avoid splashing.
11. Do not exceed the recommended temperature for the particular grade of bitumen being used. Use a thermostatically controlled bitumen boiler to provide maximum safety.
12. After finishing all gas connections check for leaks using your sense of smell, or soapy water. Never use a naked flame.
13. Make sure you understand how the equipment works – before you use the bitumen boiler you must be aware of the potential hazards present and of the precautions to be taken.

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