DSEAR Risk Assessment Guide 1: Installation of an R32 Split Air Conditioning System
Date: February 2020

Prior to installation of the system it is important to ensure that the location is suitable for this type of system and that manufacturer's instructions have been followed with regard to the minimum room volume for the maximum charge weight. This assessment process is designed to augment a detailed risk assessment not replace it.

The FETA R32 DSEAR Assessment has identified that if a comfort cooling small split air conditioning system (typically less than 3kg refrigerant charge), is located correctly in accordance with the manufacturer's instructions, then a typical leak on the low pressure side of the system from a flare or service valve will result in Zone 2 NE. BS EN 60079-10-1 states that this zone may be treated as non-hazardous. Such a zone implies that an explosion, if it takes place, will have negligible consequences.

The following step by step assessment assumes that the site in which you are working has no specific risks or hazards. If this is not the case, a full assessment will be required.

Question	N/A	YES	NO	Comments
1. Has the system been electrically isolated?				If yes go to question 2 If no rectify and reassess
2. Are hot works required for jointing of the refrigeration pipework?				If yes go to question 4 If no go to question 3
3. Are permanent mechanical joints required?				If yes go to question 7 If no go to question 10
4. Are you competent to carry out brazing tasks?				If yes go to question 5 If no stop assessment
5. Has a hot work permit been issued?				If yes go to question 6 If no stop assessment
6. Brazing certificate number				
7. Has correct PPE been selected?				If yes go to question 8 If no stop assessment
8. Are suitable first aid facilities available?				If yes go to question 9 If no stop assessment
9. Is the area adequately ventilated?				If yes go to question 10 If no stop assessment
10. Have the flare connections been made to a suitable standard?				If yes go to question 11 If no rectify and reassess
11. Is Oxygen Free Nitrogen purging at the correct flow rate through the pipework?				If yes go to question 12 If no rectify and reassess
12. Are the pressure regulators in date?				If yes go to question 13 If no rectify and reassess
13. Are the flash back arrestors in date?				If yes go to question 14 If no rectify and reassess

14. Has the oxyfuel equipment been leak tested?				If yes go to question 15 If no rectify and reassess
15. Has the Oxygen Free Nitrogen equipment been leak tested?				If yes go to question 16 If no rectify and reassess
16. Are the cylinders upright and secure?				If yes go to question 17 If no rectify and reassess
17. Upon completion is a fire watch to be undertaken?				If yes go to question 18 If no rectify and reassess
18. Duration of fire watch				
19. Is the system to be pressure tested with Oxygen Free Nitrogen?				If yes go to question 20 If no rectify and reassess
20. What is the required strength pressure test?				
21. What is the required tightness pressure test?				
22. Has the pressure been incrementally increased in a safe manner?				If yes go to question 23 If no rectify and reassess
23. Has the system passed the strength test?				If yes go to question 24 If no rectify and reassess
24. Has the system passed the tightness test?				If yes go to question 25 If no rectify and reassess
25. What was the duration of the tightness test?				
26. Has the system been safely de-pressurised into a well ventilated environment?				If yes go to question 27 If no rectify and reassess
27. Has a flammable gas leak detector been energised and placed in a suitable location?				If yes go to question 28 If no rectify and reassess
28. Have all possible ignition sources been removed from the work area?				If yes go to question 29 If no rectify and reassess
29. Has a suitable vacuum pump been fitted to the system?				If yes go to question 30 If no rectify and reassess
30. Is the oil level satisfactory?				If yes go to question 31 If no rectify and reassess
31. Is the exhaust able to be discharged into a safe environment away from ignition source?				If yes go to question 32 If no rectify and reassess
32. Has a vacuum gauge been connected to the system?				If yes go to question 33 If no rectify and reassess
33. Has a suitable vacuum been achieved and held for a suitable period of time?				If yes go to question 34 If no rectify and reassess
34. Is additional refrigerant charge required?				If yes go to question 35 If no go to question 42
35. Is a suitable charging cylinder available fitted with the correct bottle adaptor?				If yes go to question 36 If no rectify and reassess
36. Have you selected a calibrated weighing platform?				If yes go to question 37 If no rectify and reassess
37. Calibration certificate number				
38. Has the charging hose been evacuated of air?				If yes go to question 39 If no rectify and reassess
39. Will the system be charged in liquid or vapour form?				
40. Has the correct additional charge been added in accordance with the manufacturers instructions?				If yes go to question 41 If no rectify and reassess
41. Can the equipment be energised to remove refrigerant from the charging hoses?				If yes go to question 42 If no rectify and reassess
42. Have the isolation valves been opened correctly?				If yes go to question 43 If no rectify and reassess

43. Has the system been leak checked with a suitable leak detector for R32?				If yes go to question 44 If no rectify and reassess
44. Have the running conditions of the system been checked/recorded?				If yes go to question 45 If no rectify and reassess
45. Have the charging hoses been removed safely and with minimum loss of refrigerant?				If yes go to question 46 If no rectify and reassess
46. Is the service valve leak free and cap replaced?				If yes go to question 51 If no go to question 47
47. Has a suitable recovery unit been fitted?				If yes go to question 48 If no rectify and reassess
48. Do you have a suitable recovery cylinder with adequate capacity?				If yes go to question 49 If no rectify and reassess
49. Have you placed it on to a suitable calibrated weighing platform?				If yes go to question 50 If no rectify and reassess
50. Have you documented the amount of refrigerant and oil recovered and filled out the appropriate paperwork?				If yes go to question 51 If no rectify and reassess
51. Have all of the tools, refrigerant and equipment been removed from site?				If yes end assessment If no rectify and reassess