

**ROYAL & SUNALLIANCE**  
ENGINEERING INSURANCE & LOSS  
CONTROL SERVICES

**MAST**  
RISK MANAGEMENT

## SAFETY VALVES

### SAFETY RELIEF VALVES

### SAFETY PRESSURE/TEMPERATURE RELIEF VALVES

No matter if it's a boiler, hot water heater, hot water storage tank or other pressure vessel, all objects containing pressure must be protected against overpressure by a properly rated and sized safety valve designed for the application. Ultimately, these valves are the most important safety device on any boiler or pressure vessel.

These overpressure protecting safety devices must be tested on a regular basis to determine freedom of operation and to help ensure their good working condition. The testing of the safety valves should be recorded in a log, just as the testing of other operating and safety controls is recorded. Another method of recording the testing is by attaching a tag on the valve itself which is signed off by the tester every time manual testing takes place.

Experience shows that, although safety valves or relief valves are listed on log sheets, they may not be tested regularly or, if they are being tested, the testing is not being logged.

The fact that some valves may continue leaking/weeping after testing is not a reason not to test them on a regular basis. As a matter of fact, testing on a more regular basis may help in preventing the valves from leaking after testing. Should a valve not reseal properly after testing, it should be operated manually again (possibly, several times) to flush out any sediment or scale caught on the seat. This should clear the valve and stop any further leakage. However, should all efforts fail to stop the valve from leaking, then it should be replaced.

Several other points for consideration regarding safety valves/safety relief valves:

- § they should be equipped with a lifting lever for testing.
- § all electric or fired hot water tanks should be equipped with combination pressure-temperature relief valves, ensuring that the temperature sensing element - being of sufficient length – senses the water within the top six inches of the vessel.
- § they should be installed directly on the vessel with no intervening shut-off device.
- § they should be equipped with full-size discharge piping – of the same size as the opening provided in the valve body- installed in accordance with standard practice, arranged so that there is no danger of injury to personnel at the time the valve discharges and, piped toward a suitable drain, using full size piping throughout the entire pipe run.
- § when testing, if they are found in any way not performing their intended function, repairs or replacements should be made immediately.