

Size of caravan holiday home	Approx. total volume of sealed system	Volume of 100% Fernox Alpha 11 antifreeze/inhibitor needed for 30% and -17°C
28 x 10 2 bed	15 litres	4.5 litres
35 x 12 2 bed	17.5 litres	5.25 litres
36 x 12 3 bed	20 litres	6.67 litres
Twin units*	25-100 litres	8.33-30 litres

*Contact unit manufacturer for total volume

Above is a table showing the approximate total volume of a system and the volume of 100% antifreeze needed to protect that volume. If a system is found to contain less than 30% antifreeze/inhibitor, the easiest and safest way to rectify this is to drop the entire contents of the sealed system (typically 15 litres) and refill using 30% premix.

The solution must be premixed or there is a danger that by filling the system partially with fresh water and then adding neat antifreeze/inhibitor insufficient mixing will occur. The data assumes the use of Fernox Alpha 11.

There are only two antifreeze/inhibitors recommended by Morco. The concentration required when using Sentinel X500 is different from Fernox Alpha 11 - please refer to the data sheet.

The inhibitor content in the system is necessary to stop corrosion within radiators and to neutralise dissolved chemicals in the water. Insufficient inhibitor will cause noisy boilers and/or rusty radiators.

Condensing combination boilers

Historically, condensing boilers have been fitted to residential park homes, but more recently all combination boilers supplied in caravan holiday homes have been of the condensing type.

As part of the condensing process, a liquid condensate is produced that leaves the boiler via a condensate trap and flows into the waste water drain under the caravan holiday home. In certain circumstances, this condensate can freeze and block the passage of newly generated condensate that in turn extinguishes the boiler and displays a fault code. There are four ways of mitigating this problem:

1. The condensate trap used should be siphonic. It will store approximately 150ml of warm condensate inside the boiler and release it all at once, making freezing within the pipe below less likely. (Morco's GB range of condensing boilers features a siphonic trap.)



2. Condensate traps can be removed from the boiler when it is not in use to avoid being damaged by frost. They must be replaced before turning the boiler on as they are an important feature of the boiler's operation (see photo). Freezing tests have shown the trap fitted to the GB24 and GB30 combis to be resistant to frost.

3. The pipe that takes the condensate from the boiler to the drain needs to be at least 22mm. Most installations will feature a 22mm pipe changing to a 32mm pipe before it passes through the floor.

4. The condensate pipework should, wherever possible, be vertical until it reaches the main 110mm waste pipe under the caravan holiday home. This way the condensate has the easiest possible journey. Horizontal condensate pipes will trap fluid and may freeze.

Summary

When leaving a caravan holiday home unused for the winter, the only way to guarantee protection for the hot and cold water system is to ask an experienced engineer to carry out a drain-down using a system capable of blowing water out.

When spending time in a holiday home during the winter, it is important to be aware that leaving the central heating system on will guarantee a warm night's sleep but not guarantee protection from frost damage caused by the expansion of ice under the home pressurising the mains water within the home itself.

The only way to guarantee protection for the sealed central heating circuit (if fitted) is to check with a refractometer that the system has sufficient antifreeze to withstand the temperatures it is likely to encounter during the winter.

The other approaches listed above may offer partial protection which may prove to be enough, but BH&HPA members and owners should be aware that they are taking a chance. ➤

Further information

Each holiday home manufacturer's handbook provides specific guidance on maintenance requirements and preparations for winter.

For further advice on the Water Regulations in England, Wales and Northern Ireland and Water Byelaws in Scotland, WRAS offers a technical enquiry service. Please call 01495 248454 or email info@wras.co.uk.

Further information about how the Water Supply (Water Fittings) Regulations 1999 affect caravan holiday home and park homeowners is available in a WRAS booklet, 'Holiday and Residential Parks' - available free of charge from tinyurl.com/hvovuy.