

FREEZING ON A SUMMER'S DAY

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It's a beautiful sunny morning here in Portsmouth and quite warm already. We're in the English Heritage Archaeological Conservation laboratory. Just to cool down a bit we opened up our freeze drier to weigh some wood. It's -30°C in the chamber! In there we've got barrel staves from the *Stirling Castle* shipwreck, a Medieval set of stocks from Barking Abbey and Roman bowl fragments from Birdoswald fort.



All the wood was found wet and has been treated with Polyethylene Glycol before it was frozen and placed inside the vacuum freeze drier. The freeze drier removes the water in the wood via sublimation (where the frozen water is transformed to the gas state without going through the liquid state). This water is collected in the small chamber as ice. We take the

wood out every 2nd day and weigh it. The wood is dry when it stops losing weight. Once it's dry it can be handled, studied or displayed.



Weighing one of the Stirling Castle barrel staves



The small condenser chamber with all ice removed from the wood.

Karla Graham and Angela Karsten