



## Pro-Lock Valve Lockout

### Environmental Testing

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# DERA

MARITIME NAVIGATION SYSTEMS

DERA FRASER

Fort Cumberland Road

Portsmouth

PO4 9LJ

RESULTS SUMMARY

Of Environmental Testing for

PRO -LOCK UK

of

PRO-LOCK SECURITY DEVICES

DERA/S&amp;E/SPS/MNS/R/NTT-17/01

Date:-17<sup>TH</sup> April 2001Pro-Lock UK  
60 Princes Way  
Fleetwood  
Lancashire  
FY7-8DB

TESTING

NO 1217

ENVIRONMENTAL TESTING

OF

PRO-LOCK SECURITY DEVICES

#### Table of Contents

1. Introduction
  2. Customers Requirement
  3. Environment & Consumption
  4. Test Procedure
  5. Conclusions
- Photographs

#### 1. Introduction:

1.1 Maritime Navigation Systems Group (MNS) DERA Fraser Portsmouth, part of the Defence Evaluation and Research Agency, is an independent shoreside test laboratory equipped to conduct Type Approval and Prototype Testing of Marine Navigational and Safety Equipment.

1.2 The Test Laboratories at DERA Fraser have been Accredited by the United Kingdom Accreditation Service (UKAS) for Performance and Environmental testing on a wide range of Marine Navigational and Safety Equipment.

#### 2. Customers Requirement:

Pro-Lock UK supplied DERA Fraser with a quantity of the Polypropylene version of their security devices. Both Standard and Standard Plus versions of the device were supplied for testing. The customer required the devices to be tested to selected temperature extremes with the addition of a drop/shock test to be conducted on the devices at the temperature extremes.

### 3. Environment:

3.1 The devices were environmentally tested to the following temperatures:

3.1.1 +55<sup>0</sup> C

3.1.2 -55<sup>0</sup> C

### 4. Test Procedure:

#### **-55<sup>0</sup> C Test**

4.1 Four devices plus spanners and tools were placed in an Astell Chamber and the chamber reduced in temperature to -55<sup>0</sup> C. This temperature was maintained for 24hrs after which the devices were removed and a functional test conducted. This entailed locking and unlocking both versions of the device using the tools from the sub zero environment.

#### **Drop Test**

4.2 The devices were then subjected to a drop test. They were dropped from a height of 1.5metres onto a steel plate. This was repeated three times on each of the four devices, spanner and tools. After each drop a functional test was conducted.

#### **Shock Test**

4.3 The devices were then subjected to a shock test. They were swung overhead and struck against a steel plate. This was repeated six times on each device. After each shock a functional test was conducted.

#### **+55<sup>0</sup> C Test**

4.4 The locking devices were returned to ambient temperature, as was the Astell Chamber and the chamber increased in temperature to +55<sup>0</sup> C. This temperature was maintained for 24hrs after which the devices were removed and a functional test conducted. This again entailed locking and unlocking both versions of the device.

#### **Drop Test**

4.5 The devices were then subjected to a drop test. They were dropped from a height of 1.5metres onto a steel plate. This was repeated three times on each of the four devices, spanner and tools. After each drop a functional test was conducted.

#### **Shock Test**

4.6 The devices were again subjected to a shock test. They were swung overhead and struck against a steel plate. This was again repeated six times on each device. After each shock a functional test was conducted.

### 5. Conclusions:

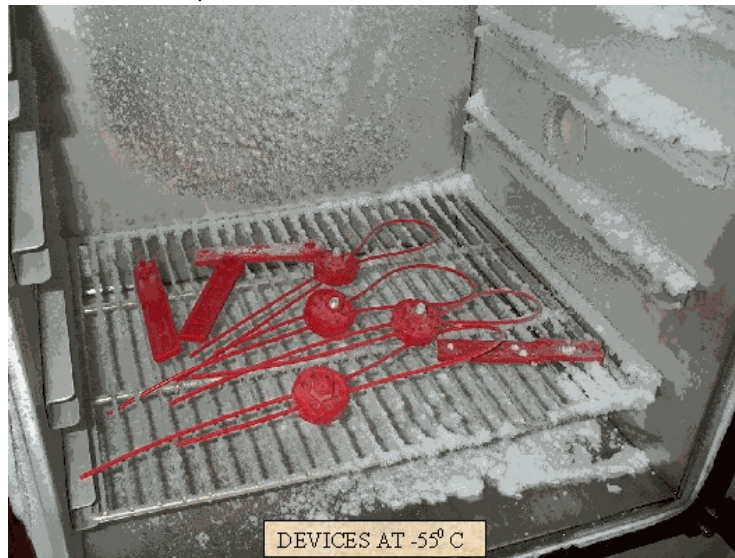
5.1 The items of Pro-Lock equipment that have undergone the tests detailed in this document continued to function satisfactorily and sustained no visible damage that impaired their performance.

Test Engineer & Summary Originator: - **R A Sharp**

Position: - **Head of Test**

### **PHOTOGRAPHS**





[Top of Page](#)

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PRO-LOCK VALVE LOCKOUT LTD.  
UNIT 4, THE OLD COAL YARD • HALL GATE LN • PREESALL • LANCS • FY6 0PJ • U.K.  
Tel: +44 (0)1253-811333 • Fax:+44 (0)1253-813030 • E-mail: [info@pro-lock.co.uk](mailto:info@pro-lock.co.uk)

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Specification  
Testing

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Isolation Tag Seals