

~~CONFIDENTIAL~~

Q'STRAIT

ISO 10542/2

**WHEELCHAIR TIE-DOWN AND OCCUPANT
RESTRAINT SYSTEMS**

**'HOOKI' TIE-DOWN ATTACHMENTS
WITH INTEGRATED LAP BELT**

Q'STRAIT Q5001/T2

**TEST DATE: 11th JUNE 2004
MILLBROOK TEST No.: S8689
MILLBROOK REPORT No.: 04/0383**



DISTRIBUTION

Q'Straint.:
Millbrook P.G.:

Mr. B. Appleyard
Contract File

(1 Copy)
(Originals)

TEST DESCRIPTION

Test No.: S8689

Test Date: 11 June 2004

Test Type: ISO 10542/2 Wheelchair Tie-Downs And Occupant Restraint System (WTORS) with 'HOOKI' attachments

Wheelchair Type: MBK Surrogate (85kg)

Occupant: 50th %ile H II (75kg)

Restraint System: Q5001/T


Track Type: Q'Straint covered tracks

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Prepared by: 
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Date : 28/08/04

Approved by: 
K. Forinton - Engineer

Date : 28/6/04



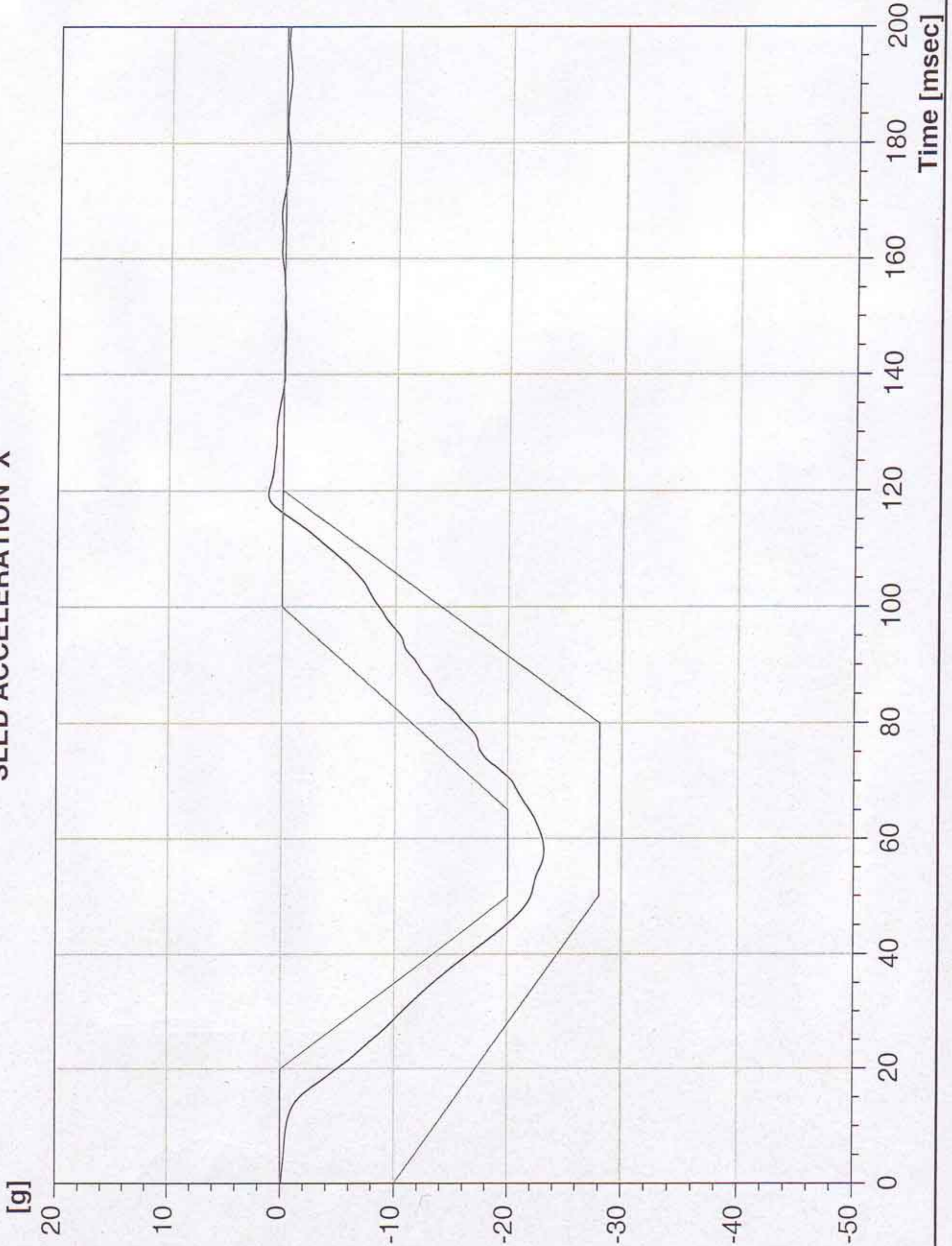
CRASH TEST LABORATORIES

Customer : Q'Straint
Test Number : S8689
Test Date : 11 June 2004
Test Type : ISO 10542/2
Dummy Type : Hyb.II 50th
Wheelchair : MBK Surrogate
 : (85kg)
Restraints : Q'Straint
Test Eng. : B. Appleyard
 : S. Robertson

Max Test Velocity = 48.78 [km/h]

Filter : CFC 60 (SAE J211)
CAC : 199.02 [g]
Sensor ID : ZU41
Max Value : 1.26 g [119.4 msec]
Min Value : -23.18 g [57.9 msec]
Plot Date : 21/06/2004 at 16:02:28

SLED ACCELERATION X





Front 3/4 view of wheelchair and occupant, pre-test



RH view of wheelchair and occupant, pre-test

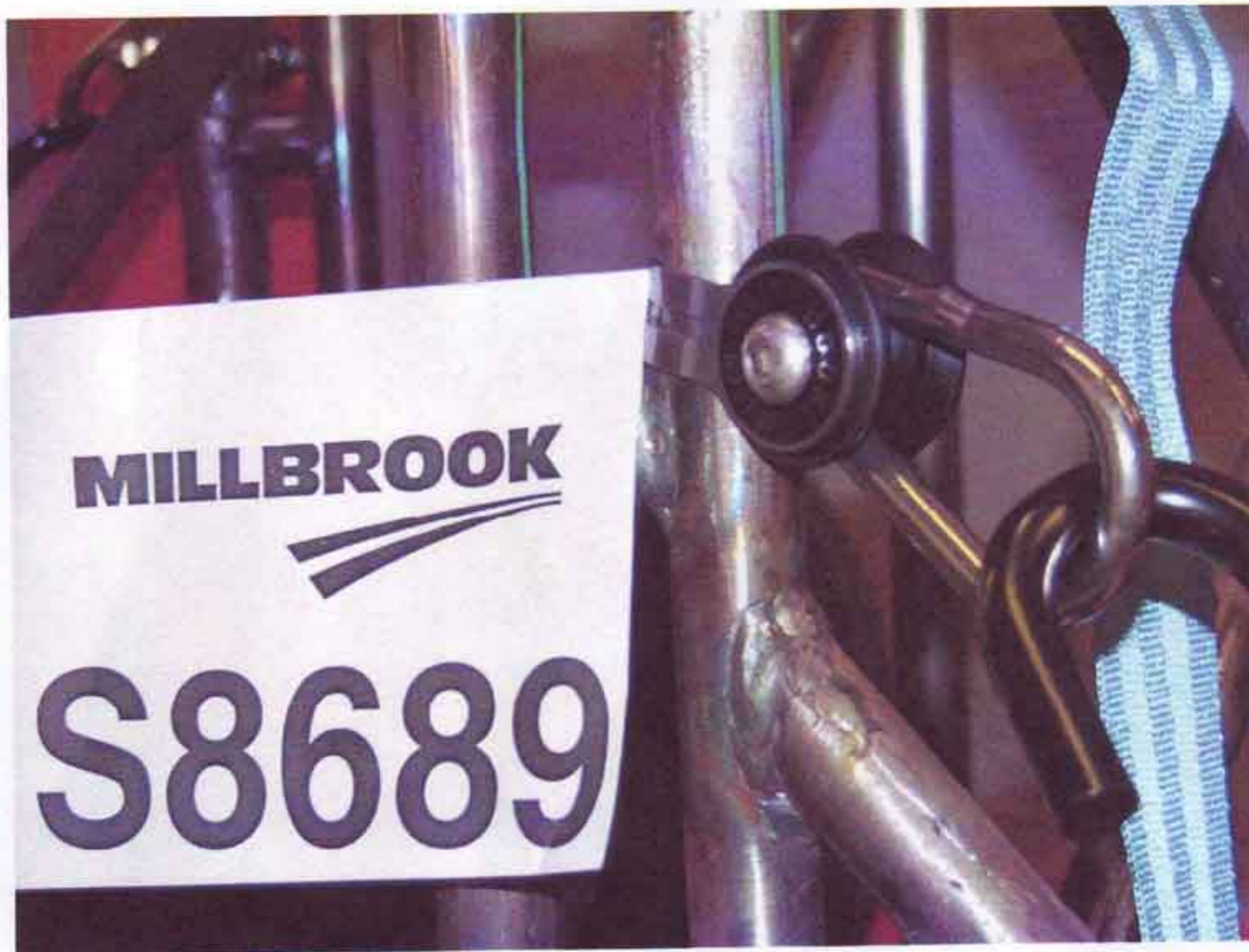


View of wheelchair front tie-downs, pre-test





View of wheelchair rear tie-downs, post-test



View of front Hooki wheelchair attachment, post-test



View of rear Hooki wheelchair attachment, post-test



Test Results

ISO/FDIS 10542/2:2001(E). Four Point Strap Type Tiedown Systems

ISO/FDIS 10542/1:2001(E)

6.2 Dynamic Performance Requirements (referenced).

Restraints	Q5001/T2 Combined System With 'HOOKI' Tie-down attachments and W/C integrated lap belt	RESULTS
Occupant: Wheelchair	Hybrid II 50th Percentile MBK Surrogate - at 85kg	
6.2.1 a).	Did the ATD remain in the test wheelchair.	YES
b).	Did the SWC remain upright on the test platform.	YES
c).	Did any WTORS anchorage components or securement end fittings become detached or separated	NO
d).	Was the SWC released without the use of tools	YES
e).	Was the ATD released without the use of tools	YES
f).	Did any part of the WTORS exhibit visible signs of tearing, fragmentation, fracture, or complete failure of any load bearing part, other than components intended to fail in a manner that limits forces on the occupant	NO
6.2.2 a).	Was the horizontal movement of the test wheelchair P- Point (X wc) less than 200 mm. (± 5 mm)	YES 97mm
	Was the horizontal movement of the dummy knee (X knee) less than 375 mm. (± 5 mm)	YES 189mm
	Was the horizontal movement of the dummy head (X head) less than 650 mm. (± 5 mm)	YES 389mm
6.2.2 b).	Was the ratio X knee/X wc >1.1.	YES 1.9:1
7.2 f).	Did the test piece comply with ISO 10542/2	YES