

Declaration of Compliance

MODUM Fire Escape Ladder



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Declaration of Compliance with Security Requirements

Description of the product:

- MODUM Original Foldable Fire Escape Ladder, MODUM Original Foldable Inspection Ladder.
- MODUM Original Foldable Universal Ladder.

Use case:

Aluminum Ladder for permeant wall mount on any type of residential buildings i.e. Townhouse, Semi-detached house, Duplex/Triplex house, apartment buildings and commercial buildings, office buildings including multi storage buildings.

MODUM ApS declares:

- The ladders have been certified by SINTEF Certification (NR. 2536), TÜV Nord, Hamburg (Belastungsprüfungen, report no: 3837PR27230), SP Technical Research Institute of Sweden (Test of foldable ladder, report nr. P805377).
- Component Specifications
 - Aluminium Profile: EN AW-6060 TF/T66, & EN AW-6063 TF/T66 - EN 537-3, EN515 Surface Treatment, anodizing E6 15 micron natural, according to ISO 7599.
 - Aluminium Rung: EN AW-6060 TF/T66, EN 537-3, EN515 Surface Treatment, anodizing E6 15 micron natural, according to ISO 7599.
 - Lock nut: DIN 985, Stainless Steel A2, Acidproof A4.
 - Release pin: Stainless Steel, EN 10270-3-1. 4301 DIN 1772.
 - Screw: DIN 931 A4 INV 70 FIL 7mm.
- Ladders are not considered machines or elevator tools. Thus, CE certificate are not applicable.

Every MODUM product is supplied with an installation manual including an adhesive scratchproof indelible label:

- Certify the product accomplishes quality standards and security regulations.
- Certify products security.
- User guide and product warranty statement.

Conclusion:

- The ladders have been designed and manufactured in compliance with European Standard EN 131, DIN 18799-1 and DIN 14094-1 (vertical ladders).

Nakskov, October 25th, 2018.



Anders Christensen
Production Manager

MODUM ApS, Linkøbingvej 8, DK-4600 Nakskov, Phone +45 2681 8560, email: info@modum.dk

SINTEF Building Research confirms that

MODUM Original Fire Escape Ladder

is considered suitable for use and satisfies requirements for product documentation in accordance with the Regulations on Sales and Documentation of Products for Construction (DOC) and the Regulations for Technical Requirements for Construction (TRC) for the characteristics, uses and conditions of use as specified in this document

1. Proprietor of the approval

Modum System AS
Luramyrvæien 19
4313 Stavanger
www.modum.com

2. Product Description

MODUM Original Fire Escape Ladder is a folding Fire Escape Ladder for escape from buildings in case of fire. The ladder is mounted vertically to the outside wall, balcony so that it can be used as exit from window, balcony, etc., see fig. 1. When pulling out the Release pin, the Fire Escape Ladder opens. Any overhead ladder sections can be opened separately from an upper floor.

The ladder is available in 16 standard lengths, from 0.9 m to 5.4 m, with increments of 0.3 m. The sections can be connected in order to adapt to individual buildings. In closed condition, the ladder appears as an aluminium drain pipe on the wall, where the steps are hidden inside the ladder, see fig. 2.

MODUM Original Fire Escape Ladders are manufactured from extruded aluminium profiles. The ladders and rungs are in quality EN AW-6060 T66, while the console is in quality EN AW-6063 T66, according to EN 573-3 and EN 755-2. The profiles are anodized according to ISO 7599. Figure 3 shows the profile dimensions. Steps screws and nuts are acid proof steel A4-80 according to EN ISO 3506. The Release pin is in acid proof stainless steel 1.4301 according to EN 10088-1.

In addition to the ladder parts, there are mounting brackets, Release pin, a top cover and fixing screws.



Fig. 1
MODUM Original Fire Escape Ladders in use during escape.

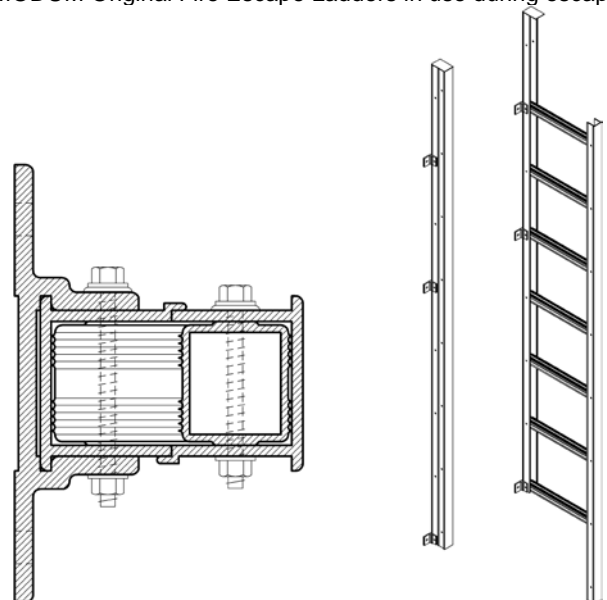


Fig. 2
Cross section of closed ladder. When closed the dimensions are 72 mm x 47 mm. When open the dimensions are 398 mm x 47 mm. The rung width is 311 mm, the rung distance is 300 mm.

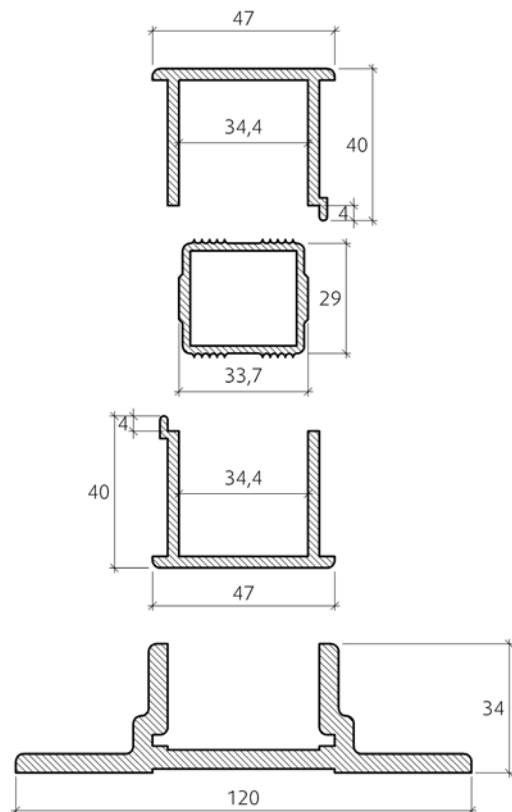


Fig. 3

Profiles for outer wings, steps, inner wings and brackets with thicknesses of 3.0, 2.0, 3.0 and 5.0 mm respectively. The profiles are fastened together with M6 x 47 mm step screws and M6 locking nuts.

3. Applications

MODUM Original Fire Escape Ladders can be mounted as Fire Escape Ladders on detached houses, terraced houses, cabins, workplaces, low blocks and the like where there may be a need for escape from the window, balcony, terrace and the like.

MODUM Original Fire Escape Ladders are used as a measure to improve safety and security through improved escape of buildings where the requirements for escape routes according to Building Technology Regulations (TEC) are otherwise satisfied. Primarily the use of the ladder is escape from windows with a distance of max. 5m above ground.

For use as approved escape route, see section 6 regarding conditions of use.

4. Properties

Load capacity

MODUM Original Fire Escape Ladders meet the load requirements specified in NS-EN 131 Ladder - Portable ladders. MODUM original ladders can be loaded with 2.6 kN in the middle of a step and by external catch. This corresponds to two persons standing at the same time in each ladder unit, provided adequate wall mounting as specified in section 6.

Effect from Fire

The materials of MODUM Original Fire Escape Ladders have fire class A1 according to EN 13501-1.

Durability

Based on the material qualities specified in section 2, MODUM Original Fire Escape Ladder are considered to have satisfactory resistance.

MODUM Original Fire Escape Ladders are made with special bushings to prevent the release pin and screws from direct contact with the aluminium and eliminate oxidation.

5. Environmental conditions

Health and environment hazardous chemicals

The product contains no priority environmental pollutants, or other relevant substances in an amount considered to be hazardous to health and the environment. Priority environmental hazards include CMR, PBT and vPvB substances.

Impact on soil and groundwater

The product has not been tested for soil and water pollution.

Waste treatment / recycling

The product is sorted as metal upon disposal. The product is to be delivered to an approved collection where it can be recycled.

Environmental declaration

No environmental declaration (ED) has been prepared for the product.

6. Terms of use

Engineering

MODUM Original Fire Escape Ladders are intended for the escape of buildings at an early stage in the fire and should be installed to protect them as much as possible from radiant heat and flames from underlying floors. The ladder should not be placed near the window of the floors below.

MODUM Original Fire Escape Ladder shall be fitted with the lowest steps at least 0.5 m above the ground and the outside profile at least 0.2 m above the ground in when open. Elevation should be increased if it is expected that opening of the ladder could be prevented by snow or placement of objects along the wall.

MODUM Original Fire Escape Ladders are mounted so that the top is at least 1.0 m, and preferably 1.2 m above the bottom window or at least 1.7 m above the balcony floor. The top steps to be taken on board should be 0.6 - 0.9 m above the window edge / railings. The ladder is provided with holes for the locking block at the first and third steps from the top. Only one Release pin must be fitted in one of the holes. The Release pin position should be easily accessible from the window, also for children. If necessary, the ladder can be supplied with holes for the Release pin at another step.

The distance to the balcony should be at least 0.50 m. Distance to the windowsill's side frame should be max. 0.35 m, but for windows with middle post, the ladder should be placed right next to the side frame.

If there are restricted exit conditions, e.g. by side-hinged and outward-facing windows with a central post, the ladder can be mounted in alignment with the centre post to provide satisfactory accessibility for escape. The manufacturer has prepared assembly instructions adapted to the different window types, such as the pivot window, top hinged window, side hanger window etc.

Use for enhanced escape

MODUM Original Fire Escape Ladder can be used for enhanced escape from existing buildings.

Use as escape route from window according to TEC with guidance

For buildings in classes 1, 2 and 4, a window with a lower edge less than 5 m above planned terrain can be used as an approved escape route according to TEC with guidance when the window opening height and width are as shown in Fig. 4.

If no special precautions have been taken, the window should not exceed 1.0m above the floor.

Escape window must be marked as exit, except in homes.

See also Building Research 520,391 Escape via window. Requirements and design and Chapter 11 of the TEC with guidance.

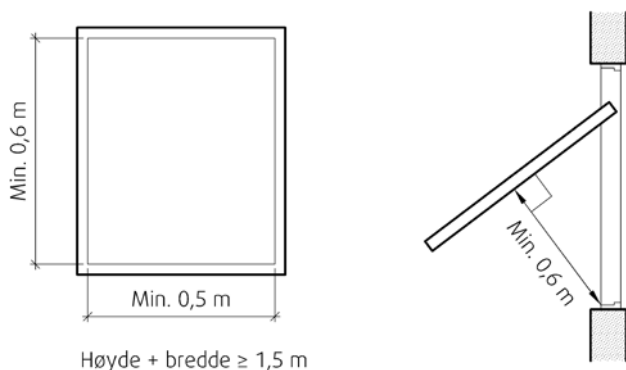


Fig. 4
Measurements on to window as escape route. Window with middle post must meet the minimum measurements on each side of the middle post.

MODUM Original Fire Escape Ladders can also be used as approved escape routes from balconies, terraces, etc.

Installation

On wooden walls, MODUM Original Fire Escape Ladder is mounted with stainless steel screws with diameter min. 6 mm. At the upper part of the ladder, tighten the screws in pairs with vertical centre spacing max. 0.6 m between the wall brackets / screw pairs. On the horizontal planks, it is recommended to use extra-long screws in order to secure the ladder to the wall.

Installation on wooden walls is done with wood screws, the ladder must be adjusted so that the load is distributed optimally, possibly with screws into the posts. It is assumed that planks have a minimum thickness of 19 mm and are attached to the structure as stated in the building regulations.

On masonry and concrete walls, the ladder is fastened with suitable expansion bolts, concrete screws or similar fasteners adapted to the current wall material.

Maintenance/control

An annual test of the ladder and its functions should be carried out, as well as the control of the fixing screw attachment to the wall.

Transport and storage

MODUM Original Fire Escape Ladders are supplied plastic packed. The shipment must be accompanied by a mounting instruction as well as the necessary accessories such as Release pin, screws and joints.

7. Product and production control

The product is manufactured by:

MODUM ApS

Linkøpingvej 8

DK-4900 Nakskov

DENMARK

The Proprietor of the approval is responsible for the production control to ensure that MODUM Original Fire Escape Ladders are manufactured according to the assumptions underlying the approval

Factory production of MODUM Original Fire Escape Ladder is subjected to surveillance and product control according to contract for SINTEF Technical Approval

8. Basis for approval

The approval is based on a system assessment and verification of properties as documented in the following reports:

- TÜV Nord, Hamburg. *Belastungsprüfungen*, rapport no. 3837PR27230, 01.09.2003
- SP Technical Research Institute of Sweden, *Test of foldable ladder*, report no. P805377, 26.11.2008.
- MODUM Holding ApS. Profile Drawing; DLT 3143 (160590), DLT 3139 (060690), DLT 3111 (920316).
From SAPA Extrusion Tønder A/S
- SINTEF Byggforsk, *Byggforskserien 520.391 – Escape through window. Requirements and design*, April 2017.
- MODUM System AS, *Installation Instructions for MODUM Fire Escape Ladder*.

9. Labelling

Each ladder must be marked with the manufacturer name and an identification indicating the time of production. It may also be labelled with the SINTEF Technical Approval Mark; TG 2536.



Approval markings

10. Liability

The proprietor / producer has the independent product liability in accordance with applicable law. Terms of use cannot be transferred to SINTEF Building Research beyond that mentioned in NS 8402.

for SINTEF Byggforsk

A handwritten signature in blue ink that reads "Hans Boye Skogstad".

Hans Boye Skogstad
Approval Manager



Zertifikat

Certificate

Registrier-Nr.

Registration no.

78/220GS/311442

Zeichen des Auftraggebers
customers reference

Auftragsdatum
Date of order

18.09.2003

Aktenzeichen
File reference

YKG8000311442

Prüfbericht Nr.
Test report no.

3837PR27230
ZB 03/ 550560

**Name und Anschrift
des Auftraggebers**

**Modum A/S
Linkopingvej 8
DK 4900 Nakskov
Danmark**

*Name and address of
the customer*

ist berechtigt, das unten
genannte Produkt
mit dem abgebildeten Zeichen
zu kennzeichnen



*is authorized to
provide the product
mentioned below with
the mark as illustrated*

Fertigungsstätte

**Modum A/S
Linkopingvej 8
DK 4900 Nakskov
Danmark**

Manufacturing plant

Geprüft nach

DIN EN 131: April 1993 "Leitern", Teil. 2

Tested in accordance with

**Beschreibung des
Produktes**

**Notausstiegsleiter
Klappbare Leiter zur Fassadenmontage bis
10 Meter Länge**

Description of product

Bitte beachten Sie auch die umseitigen Hinweise
Please also pay attention to the information stated overleaf

**TÜV NORD CERT GmbH & Co. KG
TÜV CERT-Zertifizierungsstelle für
Maschinen und Fördertechnik**

Der Leiter
The head

Rainer Koch



TÜV NORD CERT

Am TÜV 1 • 30519 Hannover • Fon +49 (0)511 986 1470 • Fax +49 (0)511 986 1590

Gültig bis: 12.2006
Valid until:

Hannover, den 15.12.2003
Hanover, dated



Belastungsprüfungen

1. Angaben zum Prüfobjekt

Gegenstand: Feuerleiter
Werkstoff: Aluminium
Kennzeichnung: keine

2. Angaben zur Prüfung

Prüfgrundlagen: DIN EN 131
Punkt 3.2 Ausführung
Punkt 3.3 Oberflächenbeschaffenheit
Punkt 3.6 Sprossen/Stufen

3. Ergebnis

3.1 DIN EN 131 Punkt 3.2 (Ausführung)

Scherstellen sind keine vorhanden. Die Sprossen sind mit Schrauben und selbstsichernden Muttern befestigt.

3.2 DIN EN 131 Punkt 3.3 (Oberflächeneigenschaften)

Folgende Ecken, Kanten und vorstehende Teile sind nicht abgerundet und sind eine Verletzungsgefahr:

- Im zusammengeklappten Zustand das Blech zur Abdeckung der Leiterholme
- Im ausgeklappten Zustand das Blech zur Abdeckung der Leiterprofile, so wie die Enden der Leiterholme

3.3 DIN EN 131 Punkt 3.6 (Sprossen und Stufen)

Die Sprossen sind rutschhemmend profiliert. Sie sind mit Schrauben und selbstsichernden Muttern dauerhaft und fest mit den Holmen verbunden (siehe Prüfnngen Anlage P3)

Hamburg, 1. September 2003

A handwritten signature in black ink, appearing to read 'Mathes', written over a horizontal dotted line.

Mathes

Belastungsprüfungen

1. Angaben zum Prüfobjekt

Gegenstand: Feuerleiter
Werkstoff: Aluminium
Kennzeichnung: keine

2. Angaben zur Prüfung

Prüfgrundlagen: DIN EN 131 und zusätzliche Anforderungen die sich aus dem Anwendungsfall ergeben
Prüfverfahren: Belastungsprüfungen
Prüfaufbau: DIN EN 131 Punkt 4.6 und 4.7
zusätzliche Prüfungen siehe Skizze
Prüfgerät: Hydraulikzylinder, Kraftmessdose, Messverstärker, A/D Wandler

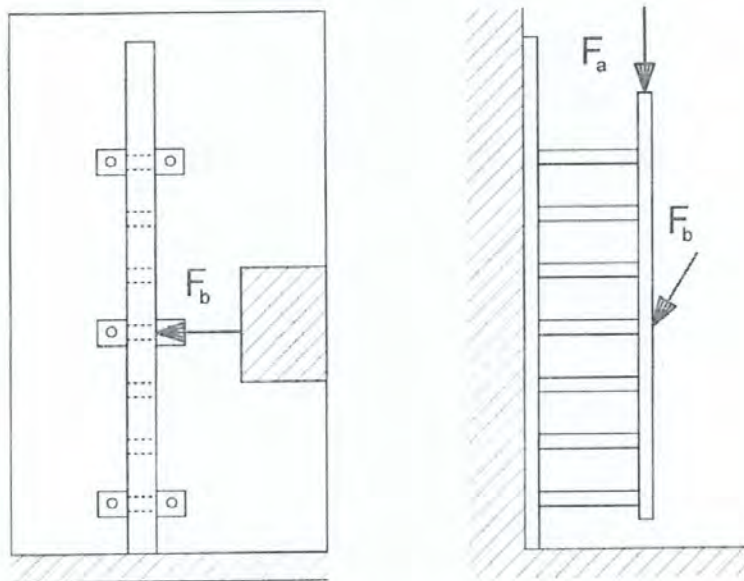


Bild 1: Prüfaufbau der zusätzliche Prüfungen

F_a = vertikale Belastungsprüfung bis zur Maximalkraft

F_b = horizontale Belastungsprüfung bis 2 kN

Belastungsprüfungen

3. Ergebnis

3.1 DIN EN 131 Punkt 4.6 (Durchbiegung der Sprossen)

Bei der Vorlast von 200 N wurde für das Maß b_1 (Abstand zwischen den Befestigungselementen der Sprosse) ein Wert von 354 mm vor und nach der Belastungsprüfung ermittelt (Belastungs-Zeit-Verlauf siehe Bild 2).

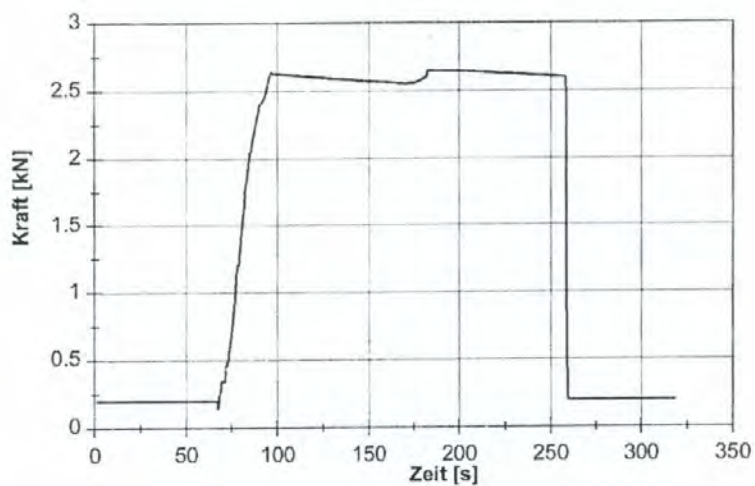


Bild 2: Kraft-Zeit-Verlauf der Prüfung „Durchbiegung der Sprossen“

Belastungsprüfungen

3.2 DIN EN 131 Punkt 4.7 (Verdrehprüfung der Sprossen)

Nach 10 maligem Aufbringen des Drehmomentes von 50 Nm wurde eine bleibende Verdrehung von $0,4^\circ$ ermittelt.

3.3 Vertikale Belastungsprüfung bis zur Maximalkraft

Die Maximale Belastung eines zwei-sprossigen Prüfobjektes beträgt 2,6 kN. Die Maximale Belastung des sieben-sprossigen Prüfobjektes beträgt 9,5 kN (siehe Kraft-Zeit-Diagramm).

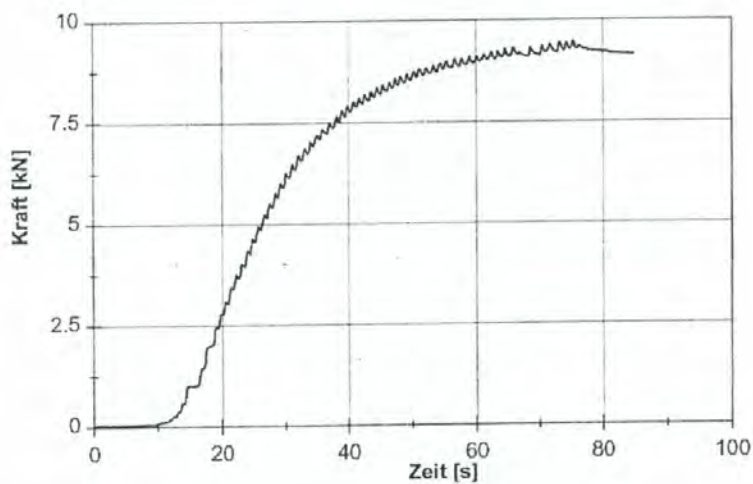


Bild 3: Kraft-Zeit-Verlauf der vertikalen Belastungsprüfung der 7-sprossigen Leiter

Belastungsprüfungen

3.4 Horizontale Belastungsprüfung bis 2 kN

Die Maximale Belastung eines zwei-sprossigen Prüfobjektes beträgt 2,6 kN. Die Maximale Belastung des sieben-sprossigen Prüfobjektes beträgt 2 kN (siehe Kraft-Zeit-Diagramm).

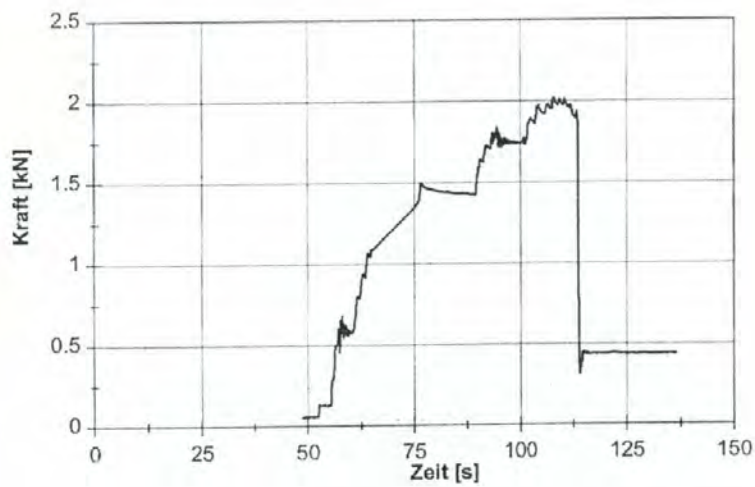



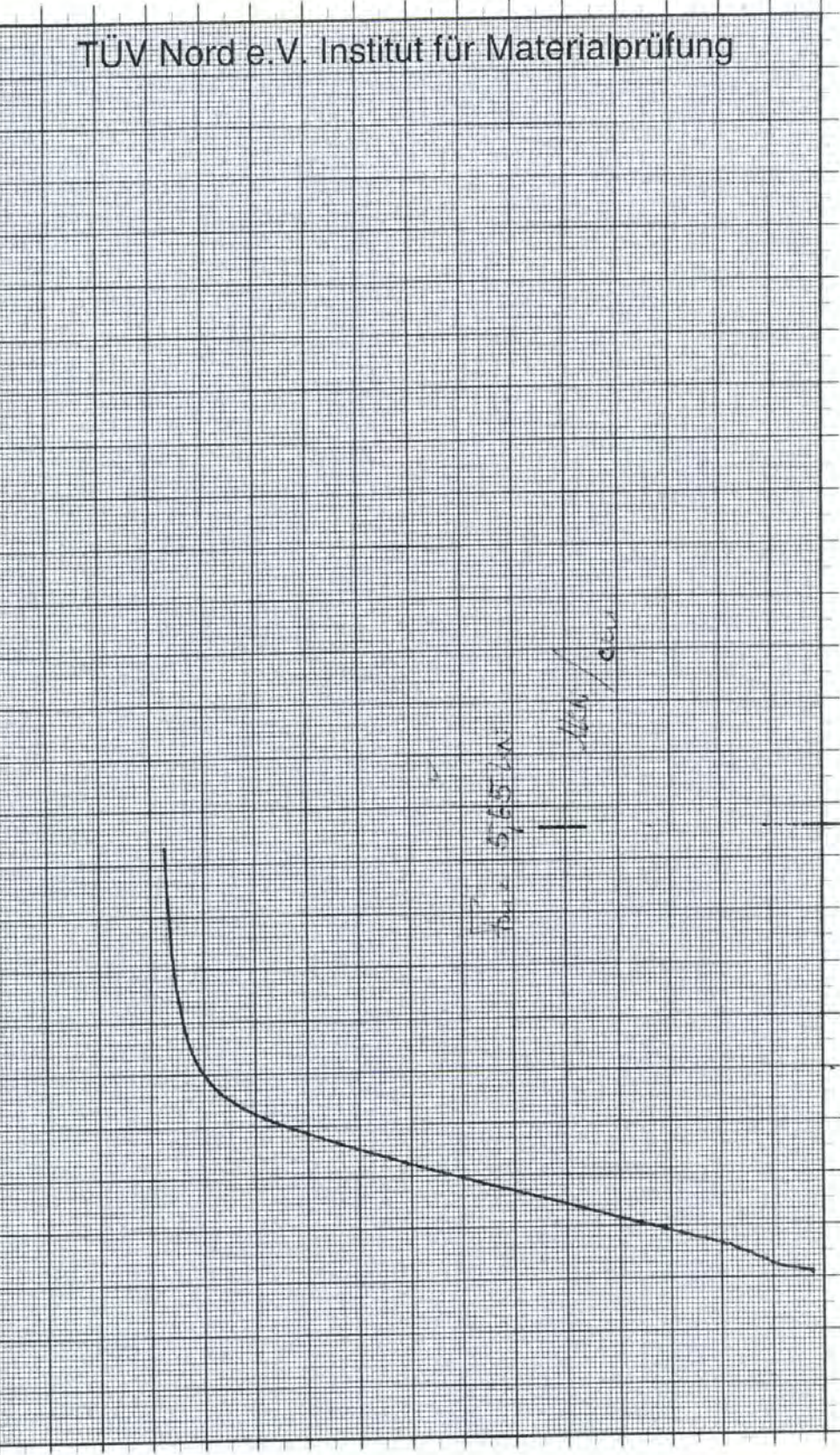
Bild 4: Kraft-Zeit-Verlauf der horizontalen Belastungsprüfung der 7-sprossigen Leiter

Hamburg, 1. September 2003



Mathes

Kraftmeßbereich:	50 kN	Maßstab X-Achse :	1 cm = 0,1 %	AuftragsNr.:	38321R 27230
Dehnungs-/Weg-Aufnehmer:	Mini MFA	Maßstab Y-Achse :	1 cm = 1,4 kN	Probenkennz.:	
Geräte-meßlänge Le:	10 mm	Range: [X = 0,01 V/cm]	[Y = 0,2 V/cm]	Werkstoff:	AL 1
Prüf-temperatur:	20 °C	Prüfung nach EN 10002 - 1	Los:	Datum/KZ:	5.9.03 905





**Ergebnisse der Zugversuche
nach DIN EN 10002-1**

Gegenstand: Feuerleiter
Werkstoff: Aluminium
Probenform: EN 10002 Bild 9

Probenkennzeichnung	Dicke	Breite	Durchmesser	Prüf-temperatur	Streckgrenze	Dehngrenze	Dehngrenze	Zugfestigkeit	Bruchdehnung	Bruch-einschnürung	Bruch-lage ²⁾	Bemerkung
	a mm	b mm	d ₀ mm	t °C	R _{0,2H} N/mm ²	R _{p0,2} N/mm ²	R _{p1,0} N/mm ²	R _m N/mm ²	L ₀ ¹⁾ = mm A %	Z %		
keine	1,99	12,01		20		209		236	17,0		m	

¹⁾ Bruchlage=G: A nicht ermittelt Bruchlage = S: Lo = bs
²⁾ G: Grundwerkstoff; Ü: Nahtübergang; S: Schweißnaht

Hamburg, 5.Sept.2003

Hübner
Hübner

Handled by, department
Sven-Agne Nilsson
Building Technology and Mechanics
+46 10 516 52 15, sven-agne.nilsson@sp.se

Translation date 2008-12-05

Modum A/S
Linköpingsvej 8
DK - 4900
DANMARK

Test of foldable ladder

(1 appendix)

1 Introduction

SP has been commissioned by Modum A/S, Denmark, to perform tests of a foldable ladder.

2 Test method

The tests were performed according to relevant parts of SS 83 13 40 "Taksydd – Stegar för fast vertikal montering – Funktionskrav" utgåva 2.

3 Test objects

A foldable ladder made of aluminium, described in Appendix 1. The ladder was chosen by the client and arrived at SP on 2008-09-11 and was tested on 2008-10-07.

4 Test method and results

The ladder was mounted in a steel test rig and was loaded in accordance with SS 83 13 40, laterally, vertically as well as on one rung. When the ladder was loaded with 0.75 kN, the deformation 35 mm was recorded. Permitted deformation is a tenth of the distance between the ladder and the wall, which in this case equals 44 mm. When the ladder was loaded vertically the deformation 11 mm was recorded during the test, and when unloaded the remaining deformation was 1 mm. The requirements according to the standard are 15 mm and 2 mm respectively. When one rung was loaded, the deformation 2 mm was recorded during the test and there was no remaining deformation. The requirements according to the standard are 7 mm and 2 mm respectively.

The ladder fulfilled the requirements in all the tests.

SP Technical Research Institute of Sweden

Postal address
SP
Box 857
SE-501 15 Borås
SWEDEN

Office location
Västeråsen
Brinellgatan 4
SE-504 62 Borås
SWEDEN

Phone / Fax / E-mail
+46 10 516 50 00
+46 33 13 55 02
info@sp.se

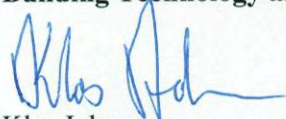
Laboratories are accredited by the Swedish Board for Accreditation and Conformity Assessment (SWEDAC) under the terms of Swedish legislation. This report may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

5 Others

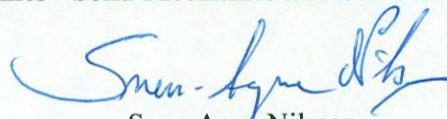
The measurement uncertainty for the applied force is $\leq 1,3 \%$ and for the measurements of deformation $\leq 1,6 \%$. The reported uncertainties correspond to an approximate 95 % confidence interval around the measured value. The interval has been calculated in accordance with GUM (The ISO guide to the expression of uncertainty in measurements), which is normally accomplished by quadratic addition of the actual standard uncertainties and multiplication of the resulting combined standard uncertainty by the coverage factor $k=2$.

The test results refer only to the tested sample.

SP Technical Research Institute of Sweden
Building Technology and Mechanics - Solid Mechanics and Structures



Klas Johansson
Technical Manager

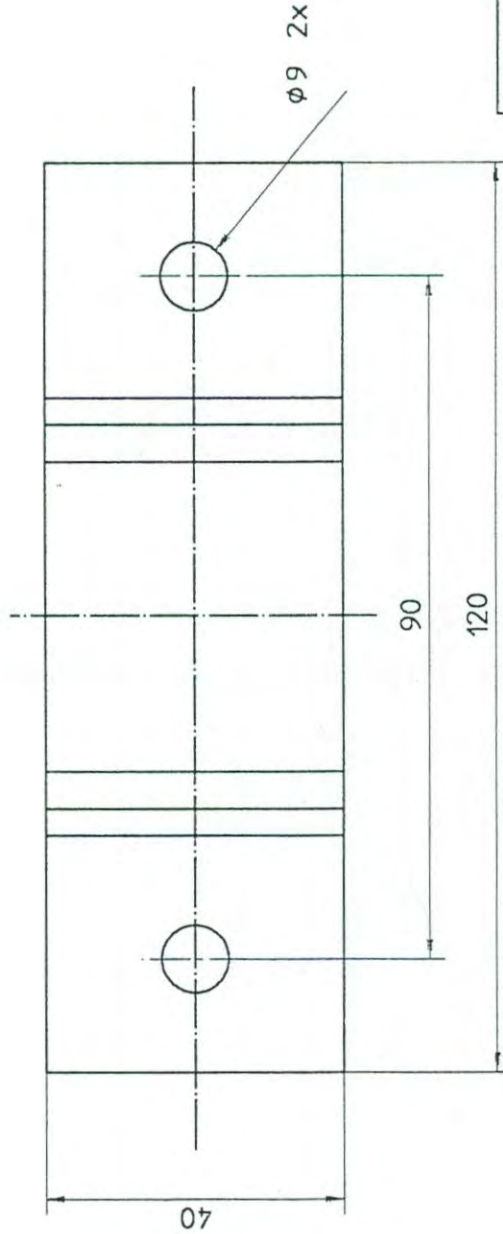
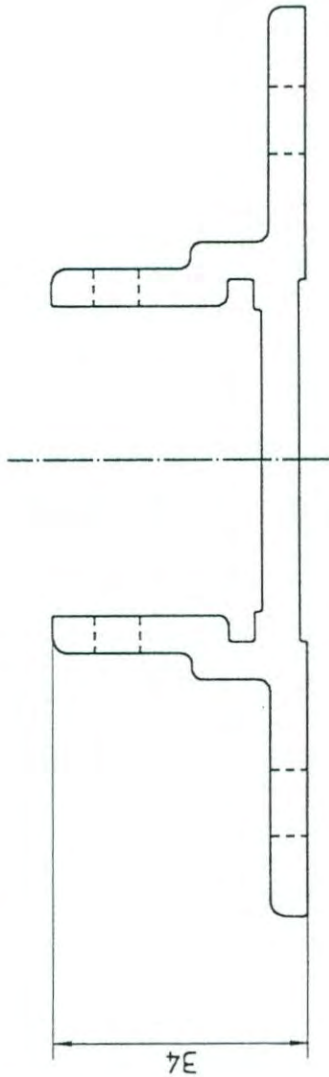
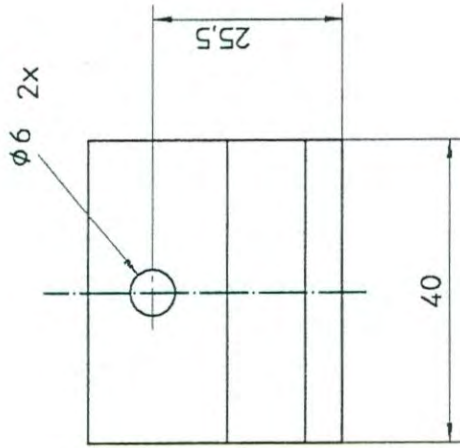


Sven-Agne Nilsson
Technical Officer

Appendix

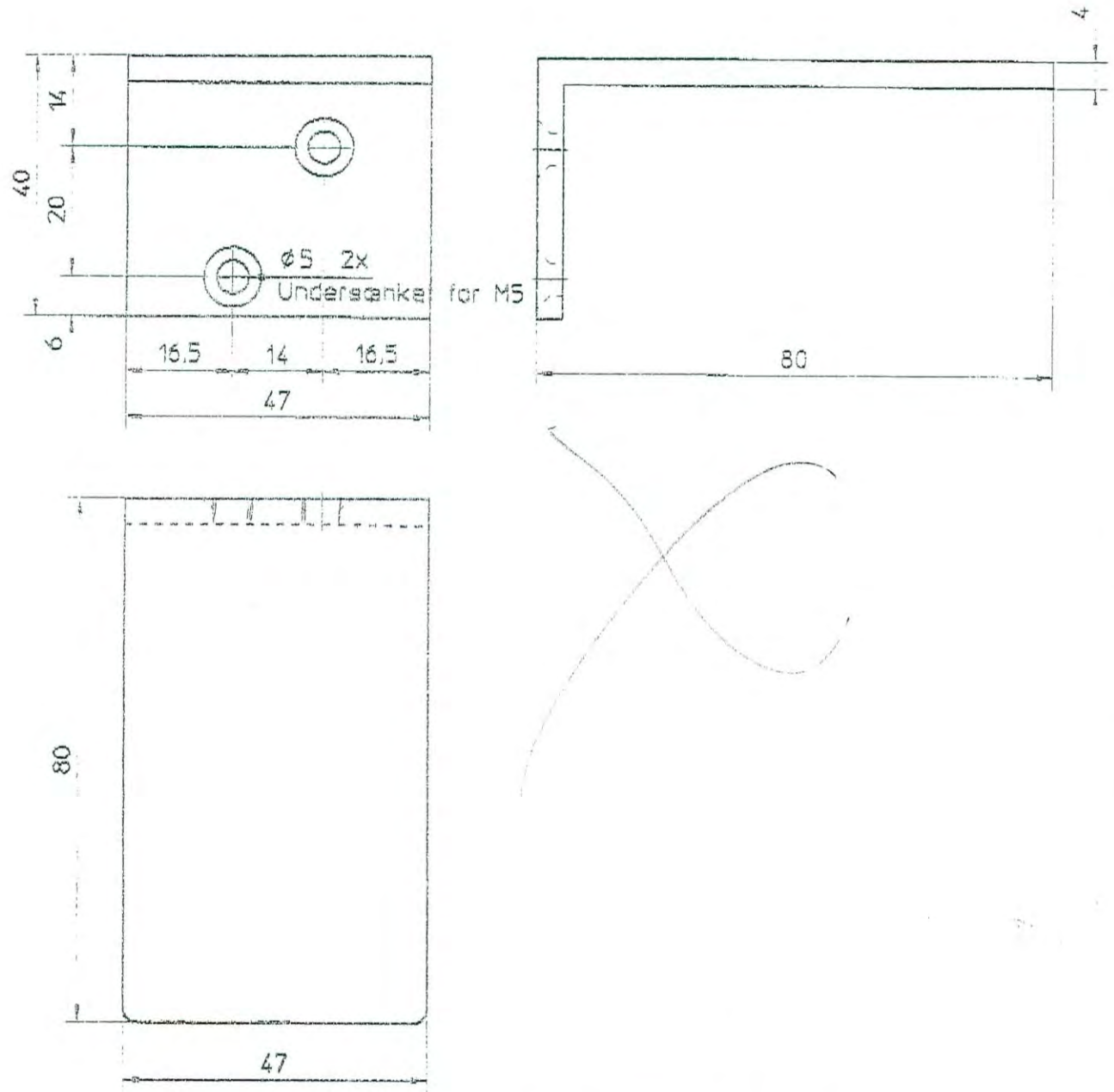
1. Drawings (6 pages)

This report is a translation from the Swedish original document. In event of any dispute as to the contents of the document, the Swedish text shall take precedence.



Bearbejdning af profil D224007

MODUM INTERNATIONAL Produkt: Danalet a/s, Skibsværftvej, 4900 Nakskov Tlf: 03 92 54 44 Telefax 03 92 50 55	MÅLESTOK 1:1	DATO 89 01 27	TEGN NR D226002
	ERSTATNING FOR ERSTATTET AF	SIGN KJK	



Fremstilles af vinkelprofil 40 x 80 x 4

MEDUM INTERNATIONAL

Produktion: Danalst a/s, Skibværftsvej, 4900 Nakskov Tlf. 03 92 34 44 Telefax 03 92 50 55

MÅLSTOK
1:1

DATO 95 01 23

SIGN KJK

Afdækning

ERSTATNING FOR
Tegning af 89 02 23

TEGN NR
D226007

Ikke målest vægtykkelse
Nicht bemessete Wandstärke

Ikke måleatte radier max. 0,4
Nicht bemessete radien

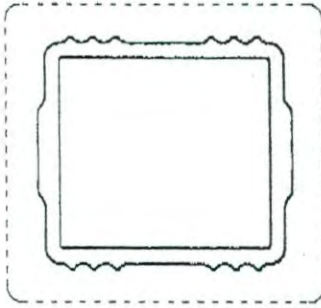
F = Fuld radius x = Radius 1.0
o = radius 0.5 # = Radius 2.0

Datum/Date
2008-11-26
Translation date
2008-12-05

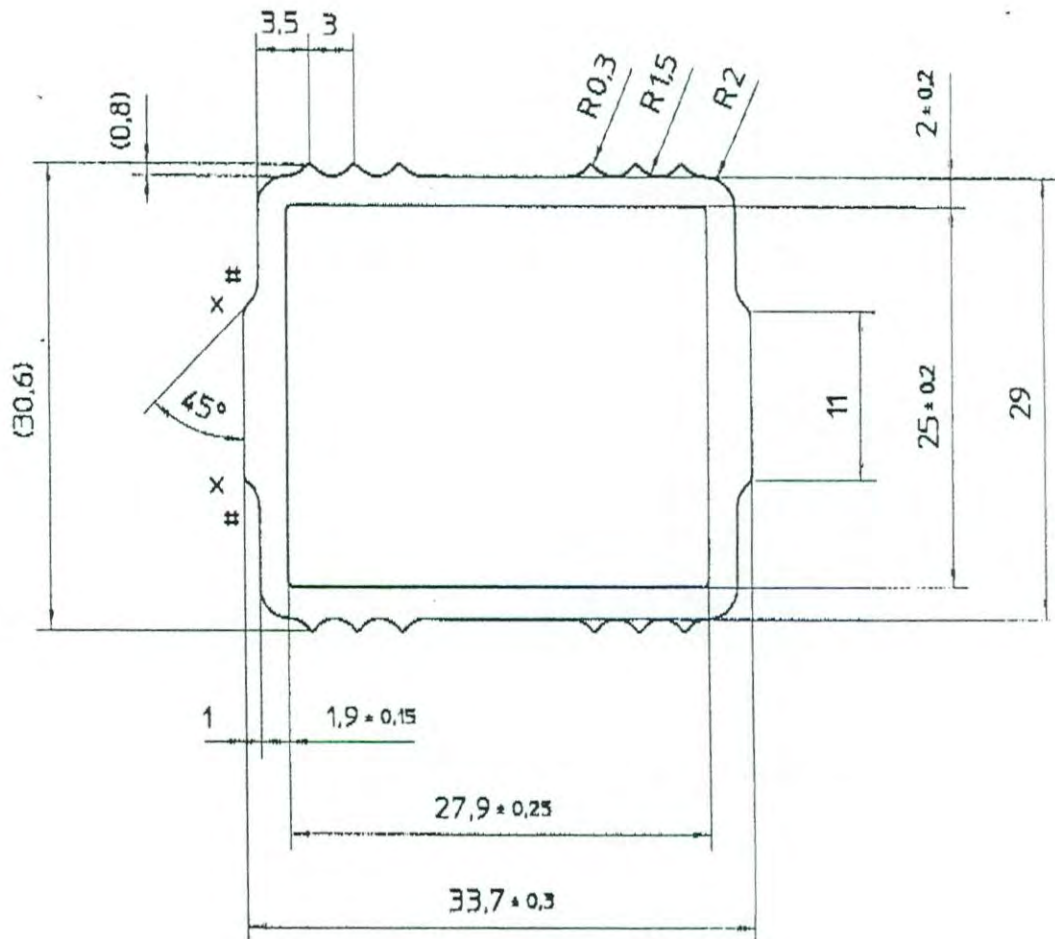
Beteckning/Reference
P805377

Sida/Page
3 (6)

Appendix 1



1:1



MODUM INTERNATIONAL

Skibeværftvej DK 4900 Nakskov Telefon 53 92 54 44 Telefax 53 92 50 55

MÅLESTOK

2:1

DATO

90 11 08

SKEN

KJK

Trinprofil

TEGN NR

D224009

Teorivægt = 0,683 kg pr. m

Udvendig overflade = 0,125 m² pr. m

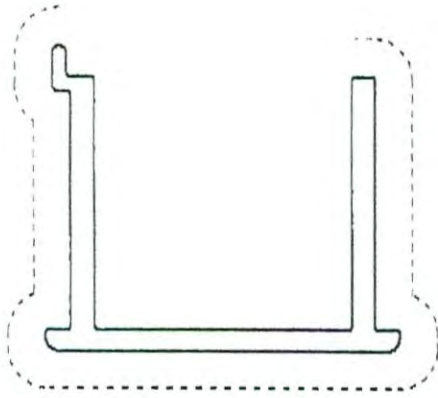
lx = 30048 mm⁴

ly = 38407 mm

Ikke målet vægtykkelse 3,0 ± 0,15
Nicht bemessete Wandstärke

Ikke målede radier max. 0,4
Nicht bemessete radien

F = Fuld radius x = Radius 10
o = radius 0.5 # = Radius 2.0

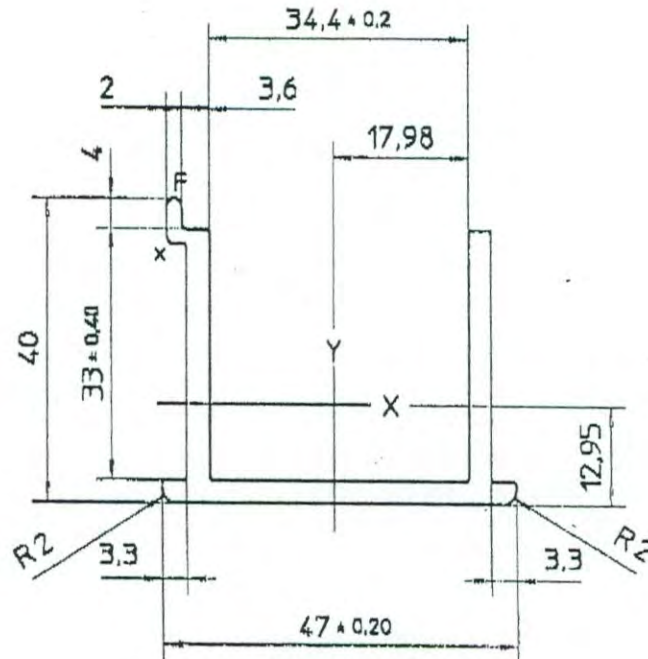


Datum/Date
2008-11-26
Translation date
2008-12-05

Betekning/Reference
P805377

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4 (6)

Appendix 1



MODUM INTERNATIONAL

Produktion: Danalst a/s, Skibvarftveej, DK 4900 Nakskov Tlf. +45 53 92 54 44 Fax +45 53 92 50 55

MALESTOK

DATO

90 11 08

1:1

SIGN

KJK

Vange

TEGN NR

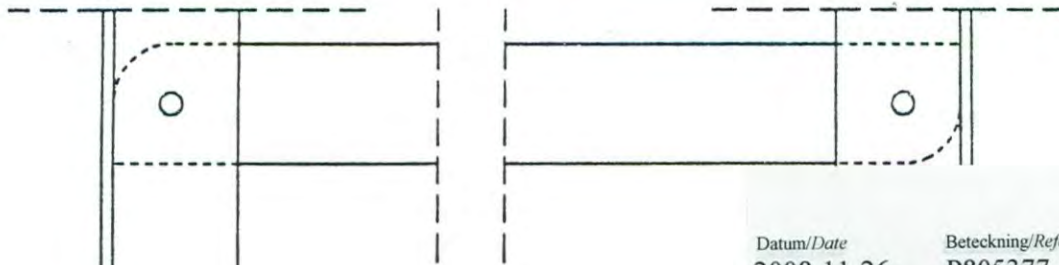
D224010

Teorivægt = 0,945 kg pr. m

Udvendig overflade = 0,240 m² pr. m

Ix = 51926 mm⁴

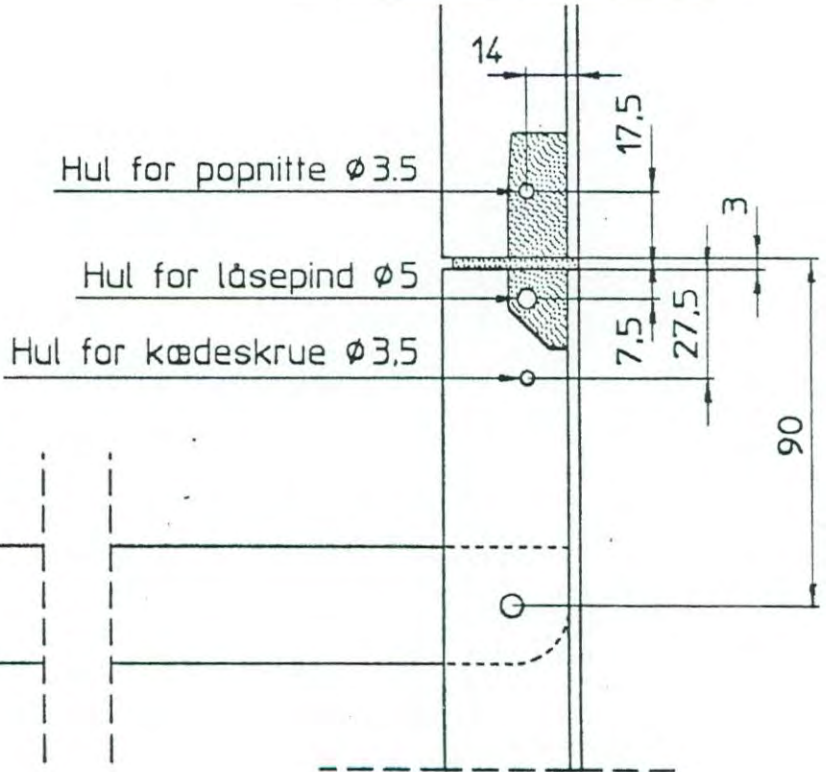
Iy = 100118 mm⁴



Datum/Date 2008-11-26
 Translation date 2008-12-05
 Beteckning/Reference P805377
 Sida/Page 5 (6)
 Appendix 1

Ydervangen overskæres med 3mm tyk klinge og Koblingsstykke D225005 indsættes i sporet.

Der skal være fæstebeslag ved trin under udløserstation.
 Hvis der ikke er et påsættes 2-delt fæstebeslag D225002



STK	GENSTAND	POS	MATERIALE	SPECIFIKATION
1	Koblingsstykke	1	Plast m.v.	Tegn.nr.D225005
1	Låsepind	2	Rustfri A2 m.v.	Tegn.nr.D225001
1	2-delt fæstebeslag	3	50 SWP	Tegn.nr.D225002

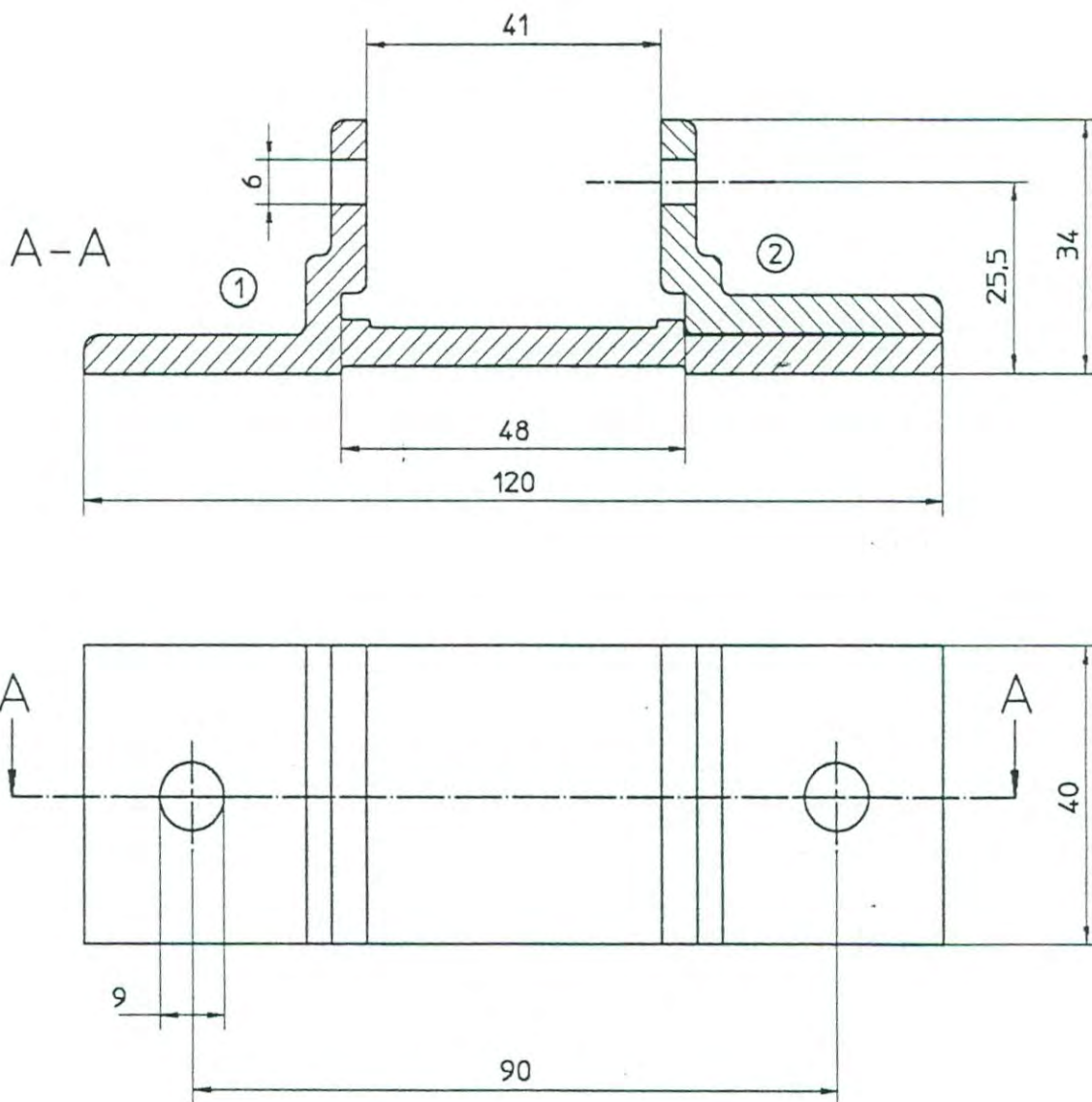
MODUM INTERNATIONAL

Produktion: Danalot a/s, Skibsværftsvej, 4900 Nakskov Tlf.03 92 54 44 Telefax 03 92 50 55

MÅLESTOK 1:2
 DATO 89 03 02
 SIGN KJK

Udløserstation

TEGN NR
D225052



STK	GENSTAND	POS	MATERIALE	SPECIFIKATION	STYKVÆGT
1	Plade for 2-delt fæste	1	50 SWP	Tegn.nr.D224005	0.083 kg
1	Vinkel for 2-delt fæste	2	50 SWP	Tegn.nr.D224006	0.034 kg
1	Maskinbolt M 6x 60	3	Rustfri A2	DIN 931	-
1	Låsemøtrik M 6	4	Rustfri A2	DIN 985	-

MODUM INTERNATIONAL

Produktion: Danalet a/s, Skibsværftsvej, 4900 Nakskov Tlf.03 92 54 44 Telefax 03 92 50 55

MÅLESTOK

1:1

DATO 89 03 24

SIGN KJK

2-delt fæstebeslag

TEGN NR

D225002

Handled by, department
Sven-Agne Nilsson
Building Technology and Mechanics
+46 10 516 52 15, sven-agne.nilsson@sp.se

Modum A/S
Linköpingsvej 8
DK-4900 Nakskov
DANMARK

Initial inspection wall ladder (1 appendix)

1 Introduction

This report presents the results from the initial production inspection of Modum A/S.

Inspection date 2008-11-06
Place of inspection The factory in Nakskov
Attendants Anders Christiansen, Modum A/S
 Sven-Agne Nilsson SP

2 Products

Foldable wall ladder "Modum" according to SP certificate 23 17 01.

3 Inspection visit

3.1 General inspection

Material inspection and production were performed satisfactorily.

3.2 Inspection of the manufacturer's own inspection procedures

The manufacturer shall perform inspections of their own according to "Beskrivning tillverkning av räddningsstegen "Modum" vid Modum A/S", dated 2008-11-10.

SP Technical Research Institute of Sweden

<i>Postal address</i>	<i>Office location</i>	<i>Phone / Fax / E-mail</i>
SP	Västeråsen	+46 10 516 50 00
Box 857	Brinellgatan 4	+46 33 13 55 02
SE-501 15 Borås	SE-504 62 Borås	info@sp.se
SWEDEN	SWEDEN	


Accredited inspection bodies are appointed by the Swedish Board for Accreditation and Conformity Assessment (SWEDAC). This report may not be reproduced other than in full, except with the prior written approval of SP.

4 **Assessment**

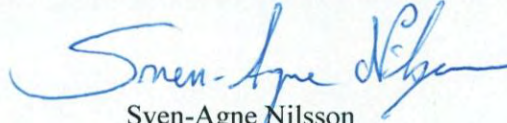
The production and own inspection procedures by Modum A/S of wall ladders have been inspected and were found to be performed satisfactorily.

Issuing of approval is recommended.

SP Technical Research Institute of Sweden
Building Technology and Mechanics - Solid Mechanics and Structures



Klas Johansson
Technical Manager



Sven-Agne Nilsson
Technical Officer

Appendix

1. Description of the manufacturer's own inspection procedures

This report is a translation from the Swedish original document. In event of any dispute as to the contents of the document, the Swedish text shall take precedence.

Datum/Date
2008-11-26
Translation date
2008-12-05

Beteckning/Reference
P805377A

Sida/Page
1 (1)

MODUM

V S T E M

Appendix 1

Modum A/S
Linkøpingvej 8
DK-4900 Nakskov

T +45 5491 0060
F +45 5491 0069

mail@modum.dk
www.modum.dk

CVR nr. 10 13 36 53

4.1.3 Kontroll och provning

4.1.3.1 Mottagningskontroll

Vangeprofilernes eloxering efterses

Vangeprofilerne efterses for ridser o.l.

Kontrollerer længde på vangeprofilerne (fra 900 m.m. til 5400 m.m. med 300 m.m. interval)

Pga. afskæring i top og bund købes vangeprofilerne hjem 100 m.m. længere end stignens standardstørrelse

4.1.3.2. Kontrol under tillverkning

Lokkemaskinen indstilles til inder eller yder vanger

Renskæring af vangen i top

Laskehuller lokkes i top

Trinhuller lokkes med 300 m.m. interval

Renskæring af vangen i bund

Laskehuller lokkes i bund

Tophætte, vægbeslag monteres på indervangen

Trin monteres på indervangen med 6x47 m.m. bolte og 6 m.m. låsemøtrikker

1 stk. trinfjeder monteres på stiger fra 900 m.m. til 3600 m.m.

2 stk. trinfjeder monteres på stiger fra 3900 m.m. til 5400 m.m.

Ydervangen påsættes med 6x 47 m.m. bolte og 6 m.m. låsemøtrikker

Bolte og møtrikker efterspændes med boremaskine

Huller bores ved 1. og 3. trin til låsepind

Nylonskive limes på ydervange til låsepind

Nylonforing sættes i trin til låsepind

4.1.3.3. Kontroll av færdig produkt

Stigen åbnes og blæses ren for spåner o.l.

Stigen testes ved åbning til 90 grader og lukkes derefter igen.

4.1.5. Produktidentifikation – Mærkning

Modum labels påsættes i bunden af stigen

4.1.6. Hantering av færdige produkter

Papmanchetter påsættes på vægbeslag

Stigen pakkes ind i plastfolie

4.2.2 Provning

4.2.2.1. Provuttag

Modum a/s har fremstillet eget afprøvnings apparat til standardstiger

Standardstigerne afprøves ca. 2 gange årligt

Standardstigerne afprøves ved skift af leverandører

11 March 17

Modum Holding ApS
Att: Brian Petersen
Linkøbingvej 8
4900 Nakskov

Specifications

We hereby confirm that we produce the specific profiles:

DLT3143 Alloy 6060 TF/T66
DLT3139 Alloy 6060 TF/T66
DLT3111 Alloy 6063 TF/T66

according to following to specifications:

Extruded profiles.

- **Profile and geometry according to Sapa drawings**
- **Alloy 6060 TF/T66 and 6063 TF/T66**
- **Specification according to norm EN 573-3**
- **Surface treatment, Anodizing E6 15 micron natural. According to ISO 7599**

Alloys specifications enclosed.

Med venlig hilsen

MARTIN NIELSEN
Telephone +45 73 93 93 78

SAPA EXTRUSION DENMARK

Produktion & Salg:
Postbox 10
Bygmestervej 7
DK-6270 Tønder
www.sapa.dk

Salgskontor:
Julstøvej 1
DK-8240 Risskov

Tel. +45 73 93 93 93
Fax. +45 73 93 93 13
CVR: 51584511
VAT no. DK 51584511
VAT no. DE 163608436

Den Danske Bank, DK-6270 Tønder
Account no. 3230 4750 131840
IBAN no. DK4532304750131840
BIC: DABADKKK

Commerzbank AG, D-20457 Hamburg
Account no. 200 400 00 / 6256051
IBAN no. DE14200400000625605100
BIC: COBADEHH

sapa:

sapa:

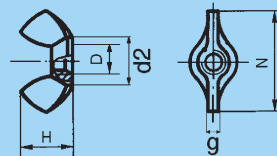
Profile specifications UK

Description	Chemical composition ¹⁾							
EN 573-3	Min. Max.	Si%	Fe%	Mn%	Mg%	Cr%	Zn%	Cu%
EN AW-6060/ Al MgSi	Min. Max.	0.30-0.60	0.10-0.30	0.10	0.35-0.60	0.05	0.15	0.10
EN AW-6063/ Al Mg0,7Si	Min. Max.	0.20-0.60	0.35	0.10	0.45-0.90	0.10	0.10	0.10

Description			Mechanical properties					
EN 573-3	F- Strength	DS/EN 755-2	Rm (MPa) min	Rp0.2 (MPA) min	A5% min	HB min	Water quench / mm wall thickness ²⁾	
EN AW-6060 TF	F22	T66	215	160	12	67	> 10 mm	
EN AW-6063 TF	F25	T66	245	200	10	75	> 6 mm	

VM

**VINGMUTTER AMERIKANSK FORM
ANSI B18.17 A LIGHT
ROSTFRITT A2, SYRAFAST A4**

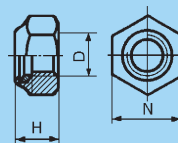


D	N	H	d2	g	FÖRP.	PRIS KRONOR PER 100 ST.	
						A2	A4
M3	17,6	8,6	8	1,6	100	1062	1620
M4	17,6	8,6	8	1,6	100	1134	1422
M5	22,5	11	10,3	2,1	100	1224	1647
M6	27,8	13,6	12,7	2,5	100	1845	2430
M8	30,3	14,8	13,8	2,8	100	2187	2970
M10	36,2	17,7	16,5	3,3	100	3870	4590
M12	49,4	24,1	22,5	4,5	50	9099	10782
M16	58,3	28,5	26,6	5,2	50	18090	29655

BEST.EX: VM AMERIKANSK FORM A2 M3
DATA.EX: WNAMA203

LÅSMUTTER

**DIN 985
ROSTFRITT A2, SYRAFAST A4**



D	N	H	FÖRPACKNINGAR	PRIS KRONOR PER 100 ST.	
				A2	A4
M3	5,5	4	500	134	165
M4	7	5	500	143	179
M5	8	5	500	147	189
M6	10	6	200	185	207
M8	13	8	200	209	263
M10	17	10	100	593	720
M12	19	12	100	735	974
M14	22	14	50	1170	6669
M16	24	16	50	2925	4470
M18	27	18,5	25	7350	20547
M20	30	20	25	6426	10200
M22	32	22	25		29871
M24	36	34	10	20850	31158
M27	41	27	10	54936	68040
M30	46	30	10	72324	76603

BEST.EX: LÅSMUTTER DIN 985 A2 M3
DATA.EX: 985A203



QUALITY MANAGEMENT SYSTEM
CERTIFIED BY LLOYD'S REGISTER

15 OKT. 2013

CERTIFICATO DI COLLAUDO
ABNAHMEPRUEFZEUGNIS
INSPECTION CERTIFICATE
CERTIFICAT DE RECEPTION
EN 10204 (2004) , 3.1

Balch 103000

Handwritten signature

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4

Cliente / Besteller/Purchaser/Cient
VALBRUNA NORDIC AB
LOVARTSGATAN 7
65221-KARLSTAD - SWEDEN-SE

Avviso di Spedizione: D-VI13007405
Lieferanzeige/Packing list/B.L.

Certificato nr: MEST316419/2013/
Prüfung/Test/Essai

Produttore: ACCIAIERIE VALBRUNA S.P.A.
Hersteller/Item/Usine produttrice

Ordine nr: R21775
Bestell/Your order/Commande

Conferma ordine nr: EI13001693
Werks/Our Order/Ref nr.

Marchio di Fabbrica:
Zeichen des Lieferwerkes
Trade mark
Sigle de l'usine produttrice



Stato di fornitura: - Annealed Cold Drawn
Lieferzustand/Delivery state/Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart/Melting process/Mode d'elaboration

Punzone del Collaudatore:
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'essayeur

Specifiche:

Anforderungen / Requirements / Exigences

VAL STOCK 2010 1.4307/304L A,CF
ASME SA276 2010 S30400 A,CF (0)
ASME SA479 2010 S30403 A (3)
ASTM A276 2010 S30403 A,CF
EN 10088-3 2005 1.4301 A,CF
EN 10272 2007 1.4307 A,CF

AISI 304
ASME SA276 2010 S30403 A,CF (1)
ASTM A262 2010 PRACTICE E
ASTM A479 2012 S30400 A
EN 10088-3 2005 1.4307 A,CF

AISI 304L
ASME SA479 2010 S30400 A (2)
ASTM A276 2010 S30400 A,CF
ASTM A479 2012 S30403 A
EN 10272 2007 1.4301 A,CF

(0) SEC.II PT.A 2010 EDITION ADD. 2011a
(2) SEC.II PT.A 2010 EDITION ADD. 2011a

(1) SEC.II PT.A 2010 EDITION ADD. 2011a
(3) SEC.II PT.A 2010 EDITION ADD. 2011a

Qualità: 1.4301/1.4307/304/304L
Werkstoff/Grade/Nuance

Marca: MVAISL
Markenbezeichnung Brand/Nuance MAXIVAL

Tolleranza: DIN 671 - h9
Tolleranz/Allowance/Tolerance

Punzonatura: 1.43017/304/L
Kennzeichnung/Marking/Marquage

Pos. nr. Pos. nr. Item nr. Nr. de poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - mm Abmessungen Dimension Dimension	Lunghezza - mm Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pieces	Peso - KG Gewicht Weight Poids	Lotto nr. Losnr. Lot nr. Lot nr.
0080	Round	5,000	3040 / 3040	259157		1013,0	302002260

TEST ALLO STATO DI FORNITURA

Test on delivery condition Prüfung auf lieferbarem produkt test a l'etat de fourniture Prueba sobre el material así como entregado

TEST	Provetta/Probetab Specimen/Provette Larg diam Specs Breite Diam. Dicke Wirth Diam. Thickness Larg. diam. épais mm	°C	Posiz. Saggio Probestab Lagepunkt Emploiment 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2		Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2		Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2		Allungamento Bruchdehnung Elongation Allongement A5 % E 4d %		Strizione Einschnürung Reduction of area Striction Z % RA %		Resilienza Kerbschlagarbeit Impact Value Resilience		Durezza Härte Hardness Dureté HB	
				Valori richiesti 1 Anforderungen/Required values Valeurs demandées	min max	310	225	620 900	20 30	30	- 40	-	- 315				
A	5	20	L	628	676	790	32	35	67	67			260				

TEST	min	max
A Grain size for ASTM E112		5

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée	min - max	0,030	1,00	2,00	18,00 19,50	8,00 10,50	0,045	0,030	0,100	-	-	-	-	-
	C %	Si %	Mn %	Cr %	Ni %	P %	S %	N %						
259157	0,012	0,57	1,89	18,27	8,03	0,030	0,030	0,084						

Intergranular corrosion test per ASTM A262 pract. E: ok.

I.Korrosion nach EN ISO 3651-2A Sensibilisierung : T1 : OK

Corrosion test per EN ISO 3651-2A sensitized T1 : OK

Sono state soddisfatte tutte le condizioni richieste
Die gestellten Anforderungen sind it. Anlage erfüllt
The material has been furnished in accordance with the requirements
Le materiel à été trouvé conforme aux exigences

Controllo antimescolanza: OK
Verwechslungsprüfung: spectralanalytisch durchgeführt
Antimixing testing performed: OK
Contrôle antimélange fait: r.a.s.

Controllo visivo e dimensionale: soddisfa le esigenze
Besichtigung und Ausmessung: ohne Beanstandung
Visual inspection and dimensional checks:satisfactory
Contrôle visuel et dimensions: satisfaisant

Melted and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination through Portal System when it leaves the production plant.

The Quality Management System is Certified acc. Pressure Equipment Directive [97/23/EC] Annex 1,s.,4.3 by TUEV and LLOYD'S

Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation

Vicenza,06/03/13 VC0008 (Mod. MCE2)	Il collaudatore di stabilimento / der Werkssachverständige/ Works inspector / L'agent d'usine <i>M. Rizzotto</i>	Pagina - 1 di 2
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Acciaierie Valbruna S.p.A.



QUALITY MANAGEMENT SYSTEM
CERTIFIED BY LLOYD'S REGISTER

CERTIFICATO DI COLLAUDO ABNAHMEPRUEFZEUGNIS INSPECTION CERTIFICATE CERTIFICAT DE RECEPTION EN 10204 (2004) , 3.1

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Produttore: **ACCIAIERIE VALBRUNA S.P.A.**
Hersteller/Item/Usine produttrice

Stato di fornitura: - Annealed Cold Drawn
Lieferzustand/Delivery state/Etat de livraison

Avviso di Spedizione: D-VI13007405
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Ordine nr: R21775
Bestell/Your order/Commande

Tipo di Elaborazione: E+AOD
Erschmelzungsart/Melting process/Mode d'elaboration

Certificato nr: MEST316419/2013/
Prüfung/Tes/Essai

Conferma ordine nr: EI13001693
Werks/Our Order/Ref nr.

Marchio di Fabbrica:
Zeichen des Lieferwerkes
Trade mark
Sigle de l'usine produttrice



Punzone del Collaudatore:
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur



of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction. Maximal and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability. The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

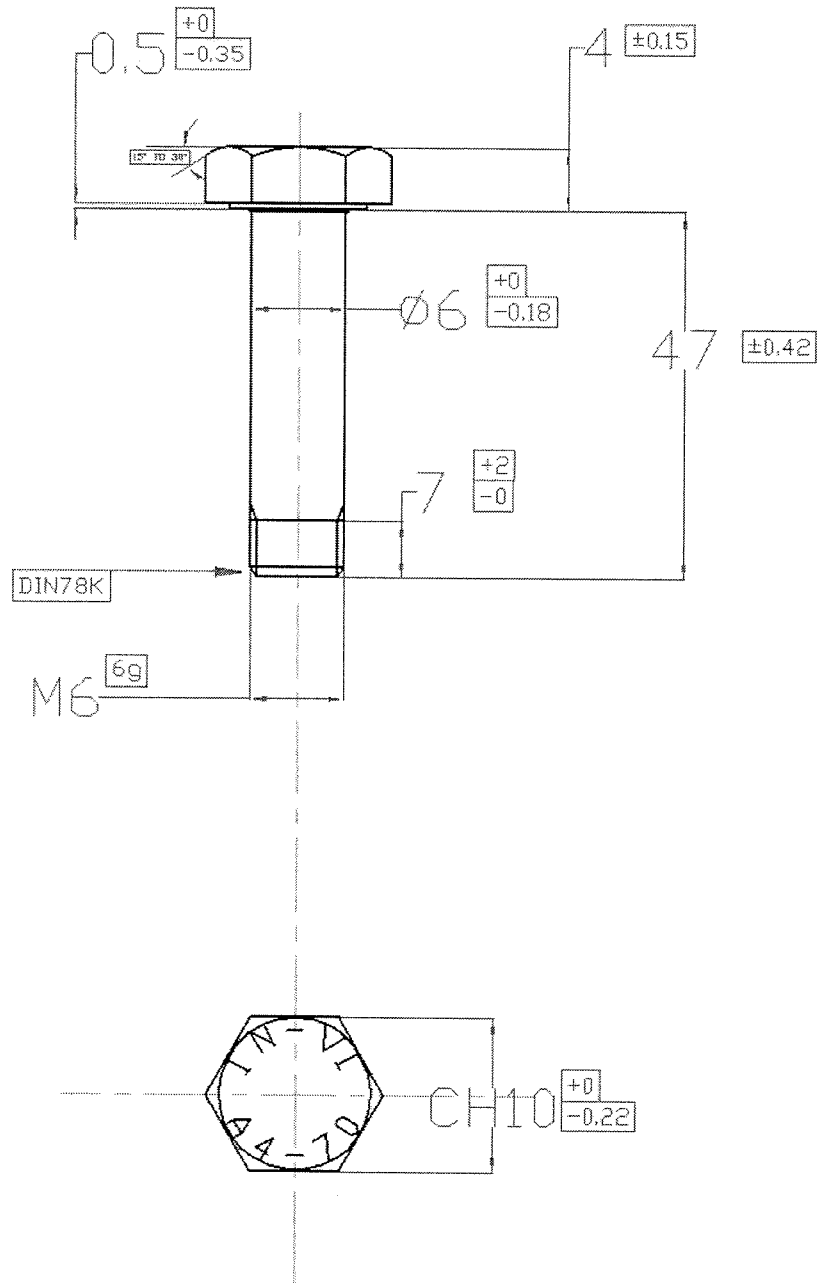
Vicenza, 06/03/13
VCQ008
(Mod. MCE2)

Il collaudatore di stabilimento / der Werkssachverständige / Works inspector / L'agent d'usine

M. Rizzotto

Pagina - 2 di 2

HEJ/HLH
A 2686003



QUOTE MANCANTI RIFERIMENTO DIN 931
ALL MISSING QUOTES ACCORDING TO DIN 931

SCALA: 2:1

CODICE ARTICOLO PART NUMBER: V09310406047050	DESCRIZIONE PRODOTTO PRODUCT DESCRIPTION DIN 931 A4 M6X47 INVI 70 FIL 7 MM	
MARCATURA TESTA HEAD SIGN: IN-VI A4-70	MATERIALE: ISO3506-1 MATERIAL: ISO3506-1 A4	CLASSE RIF. ISO3506-1 CLASS REF. ISO3506-1 R_m=700 N/mm² MIN.
DATA DI CREAZIONE RELEASED ON: 18-10-2017	DATA DI AGGIORNAMENTO UPDATE ON:	N° DI REVISIONE REVISION N°: 0
DISEGNATO DA DRAWN BY: BENINI LUCA	APPROVATO DA APPROVED BY: CALDARA M.	