Skinner Innovations LLC
Lake City, Iowa USA
www.skinnerinnovations.com
+1 801 766 4782
info@skinnerinnovations.com

MODUM
for your safety

Declaration of Compliance

MODUM Fire Escape Ladder

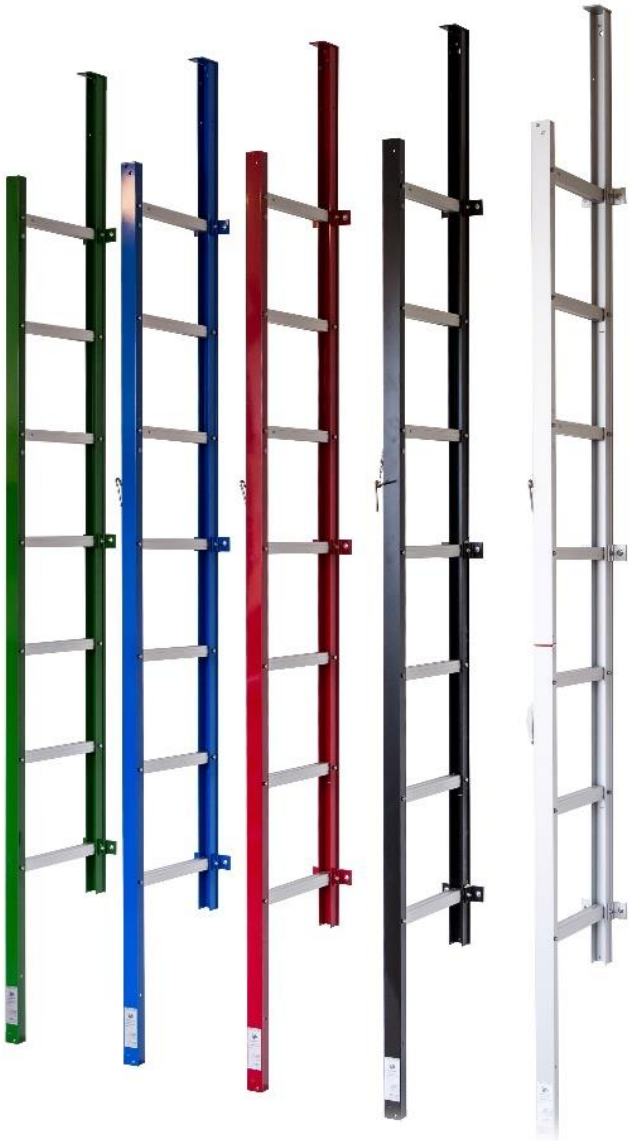


Table of content

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

SINTEF

SINTEF Certification

Nr. 2536

First time issued: 28.06.2017
Last time revised:
Valid until: 01.07.2022
Provided published on www.sintefcertification.no

Teknisk Godkjenning

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 documentt

1. Proprietor of the approval

Modum System AS
Luramyrveien 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.

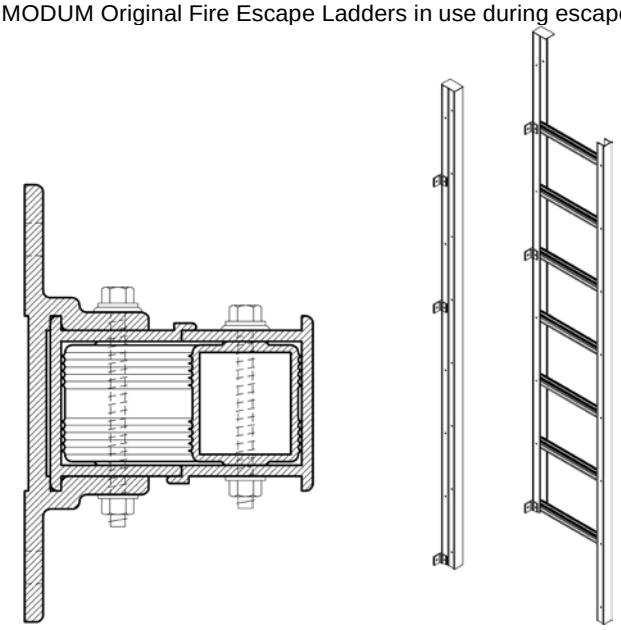


Fig. 2
Cross section of closed ladder. When closed the dimensions are 72 mm x 47 mm. When open the dimensions are 398 mm x 47 mm. The rung width is 311 mm, the rung distance is 300 mm.

Contact, SINTEF: Jon Lundesgaard
Prepared by: Eli Bjørhovde Rindal

www.sintefcertification.no Telephone: +47 73 59 30 00 E-post: certification@sintef.no

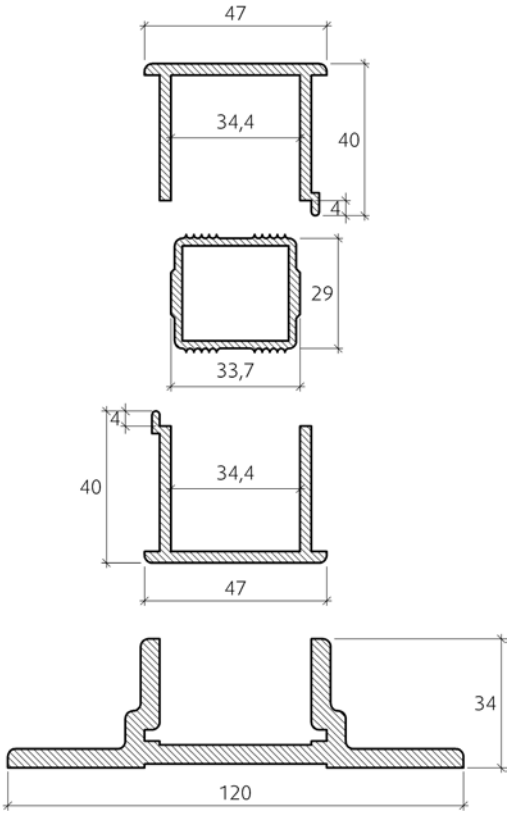


Fig. 3
Profiles for outer wings, steps, inner wings and brackets with thicknesses of 3.0, 2.0, 3.0 and 5.0 mm respectively. The profiles are fastened together with M6 x 47 mm step screws and M6 locking nuts.

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.

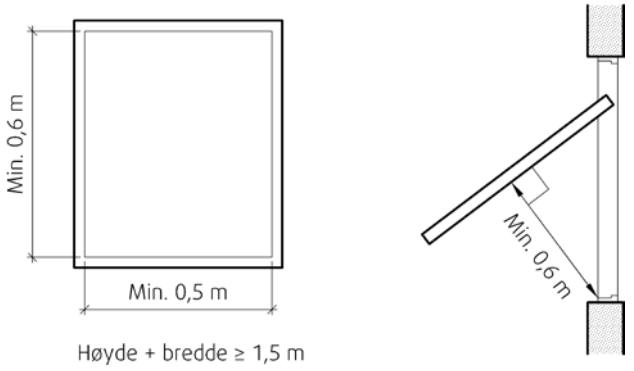


Fig. 4
Measurements on to window as escape route. Window with middle post must meet the minimum measurements on each side of the middle post.

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. *Belastnungsprüfungen*, 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.

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.

Approval markings

for SINTEF Byggforsk

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
Name and address of the customer

Modum A/S
Linkopingvej 8
DK 4900 Nakskov
Danmark

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
Manufacturing plant

Modum A/S
Linkopingvej 8
DK 4900 Nakskov
Danmark

Geprüft nach
Tested in accordance with

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

Beschreibung des Produktes
Description of product

Notausstiegsleiter
Klappbare Leiter zur Fassadenmontage bis 10 Meter Länge

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

Gültig bis: 12.2006
Valid until:

Hannover, den 15.12.2003
Hanover, dated

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

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 Prüfngen Anlage P3)

Hamburg, 1. September 2003

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:	Hydraulikzyinder, Kraftmessdose, Messverstärker, A/D Wandler

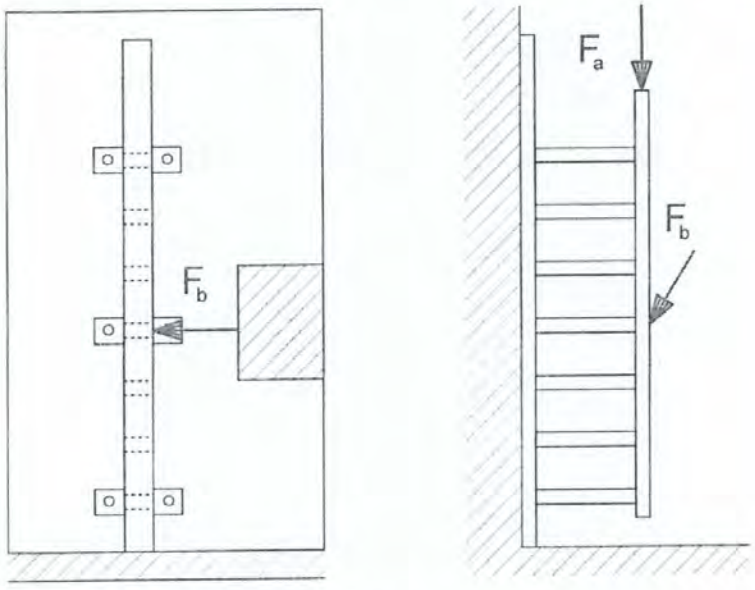


Bild 1: Prüfaufbau der zusätzliche Prüfungen
F_a = vertikale Belastungsprüfung bis zur Maximalkraft
F_b = horizontale Belastungsprüfung bis 2 kN

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).

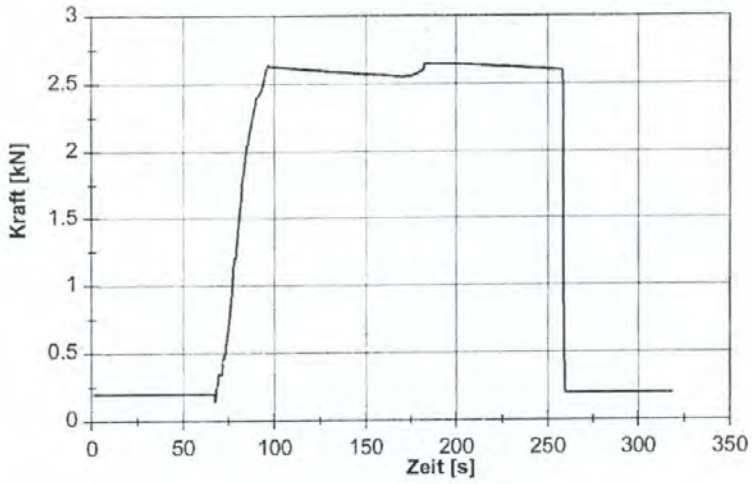


Bild 2: Kraft-Zeit-Verlauf der Prüfung „Durchbiegung der Sprossen"

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° 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).

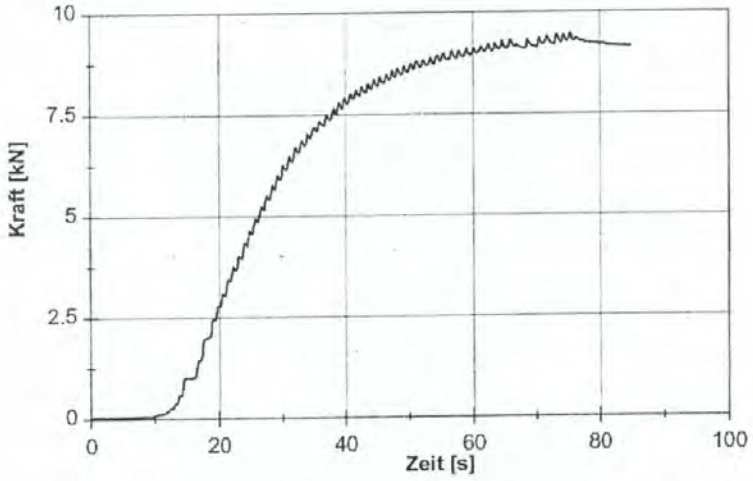


Bild 3: Kraft-Zeit-Verlauf der vertikalen Belastungsprüfung der 7-sprossigen Leiter

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).

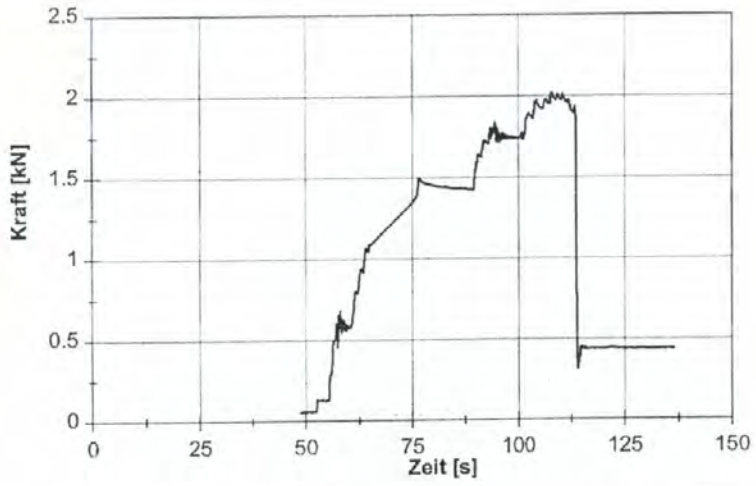
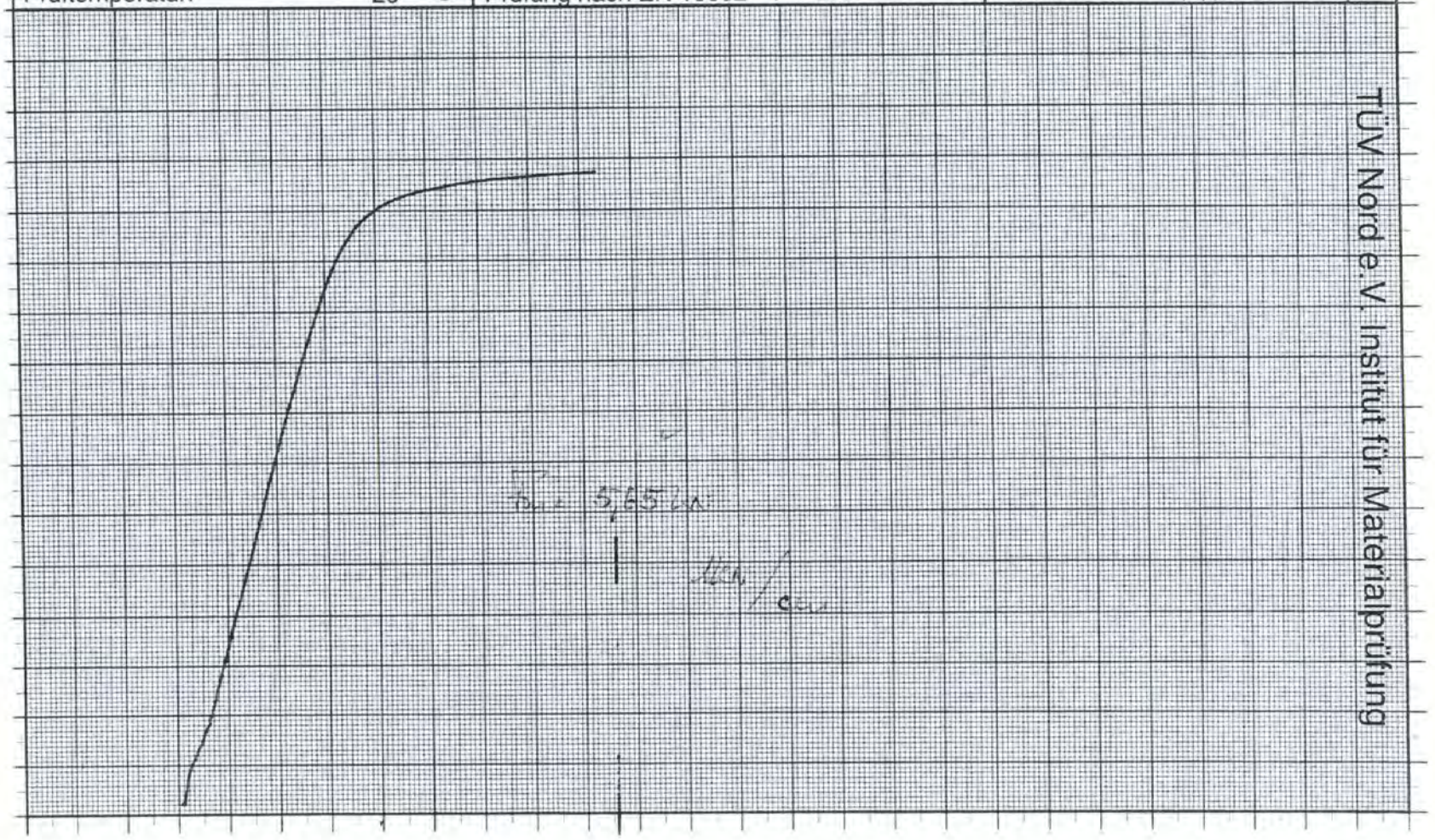


Bild 4: Kraft-Zeit-Verlauf der horizontalen Belastungsprüfung der 7-sprossigen Leiter

Hamburg, 1. September 2003

Mathes

Kraftmeßbereich:	50 kN	Maßstab X-Achse :	1 cm = 0,1 %	AuftragsNr.:	38372R2230
Dehnungs-/Weg-Aufnehmer:	Mini MFA	Maßstab Y-Achse :	1 cm = 0,4 kN	Probenkennz.:	
Gerätemeßlänge Le:	10 mm	Range: [X = 0,01 V/cm]	[Y = 0,2 V/cm]	Werkstoff:	AL 1
Prüftemperatur:	20 °C	Prüfung nach EN 10002 - 1	Los:	Datum/KZ:	5.9.03 Hoy



TÜV Nord e.V. Institut für Materialprüfung

Thoms, Bad Bramstedt

Anlage P1
Blatt 1 von 1 zu
Prüfbericht 3837PR27230

Ergebnisse der Zugversuche nach DIN EN 10002-1

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

Probenkenn-zeichnung	Dicke	Breite	Durch-messer	Prüf-tempe-ratur	Streck-grenze	Dehn-grenze	Dehn-grenze	Zug-festig-keit	Bruch-dehnung L_0[1]= mm	Bruch-ein-schnü-rung	Bruch-lage[2]	Bemerkung
	a	b	d_0	t	R_{eH}	$R_{p0,2}$	$R_{p1,0}$	R_m	A	Z		
	mm	mm	mm	°C	N/mm²	N/mm²	N/mm²	N/mm²	%	%		
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

REPORT
issued by an Accredited Testing Laboratory

1002
ISO/IEC 17025

Date 2008-11-26
Reference P805377
Translation date 2008-12-05
Page 1 (2)

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
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 "Takskydd – 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.

5 Others

The measurement uncertainty for the applied force is ≤ 1,3 % and for the measurements of deformation ≤ 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.

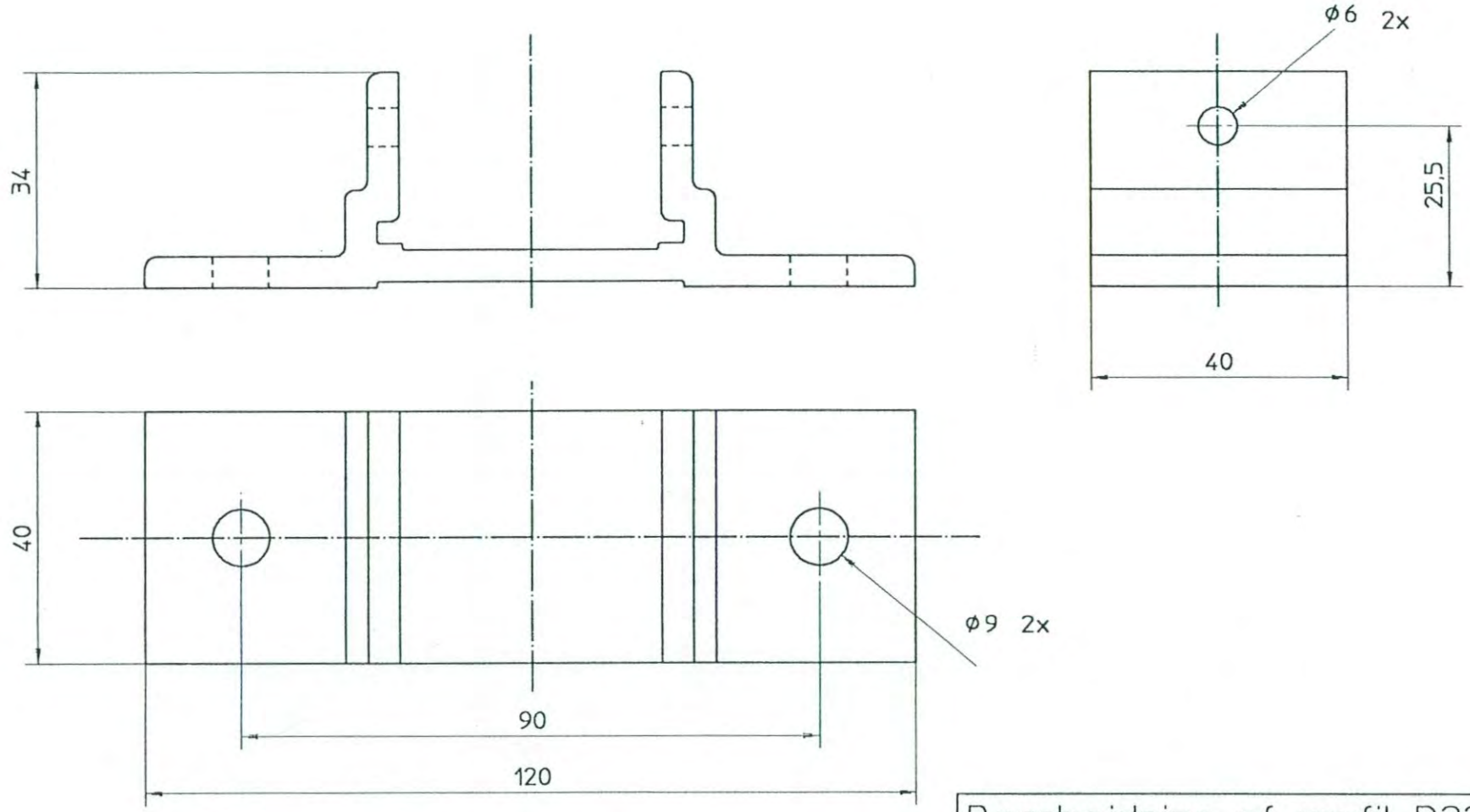
SP Technical Research Institute of Sweden
Building Technology and Mechanics - Solid Mechanics and Structures

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

Appendix 1

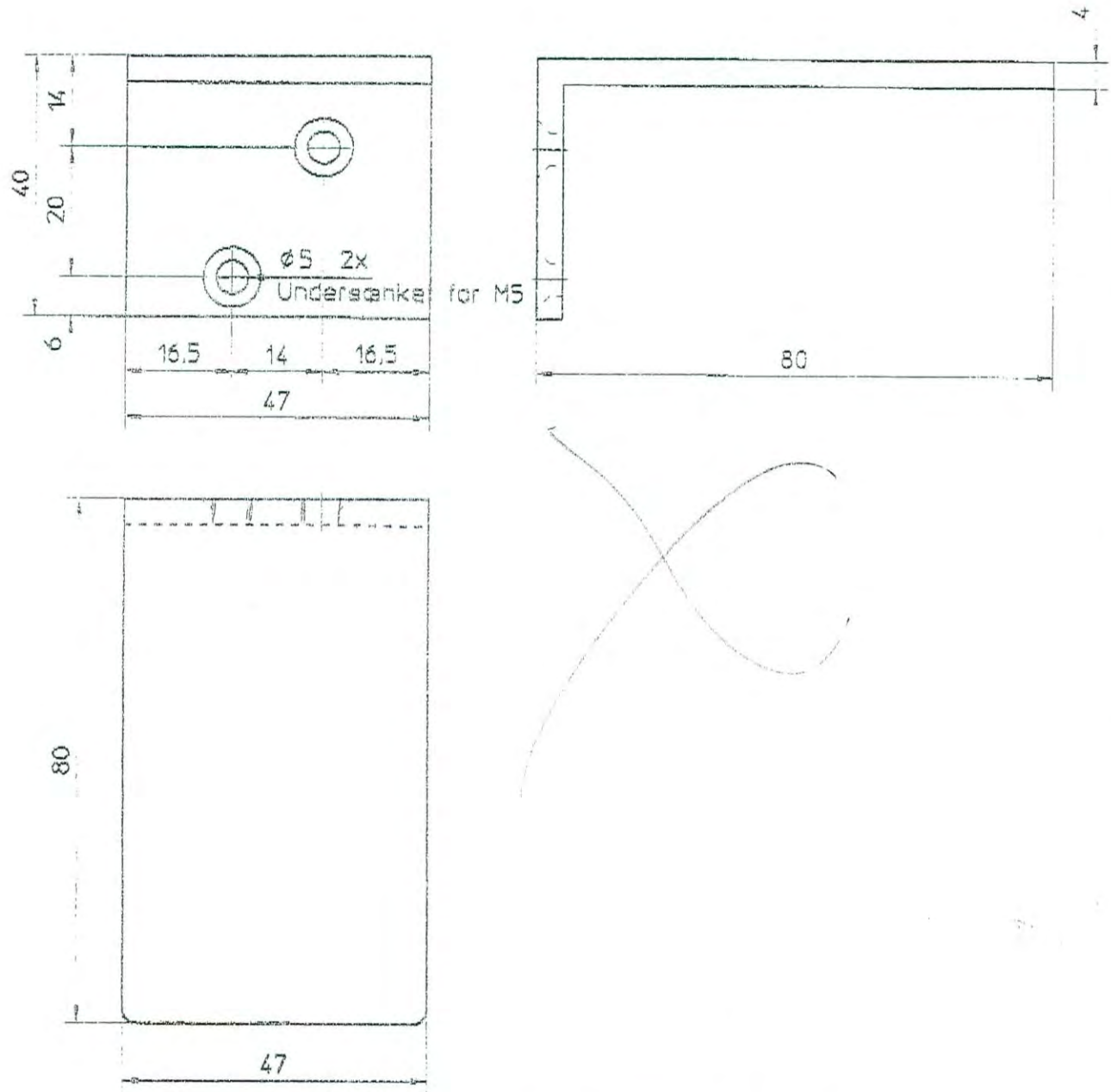
Datum/Date 2008-11-26
Translation date 2008-12-05
Beteckning/Reference P805377
Sida/Page 1 (6)

MODUM INTERNATIONAL

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

MÅLESTOK	DATO	TEGN NR
1:1	89 01 27	D226002
	SIGN KJK	
ERSTATNING FOR		ERSTATTET AF

Fæstebeslag



Fremstilles af vinkelprofil 40 x 80 x 4

MODUM INTERNATIONAL
Produktion: Danolet a/s, Skibsværftsvej, 4900 Nakskov Tlf.03 92 54 44 Telefax 03 92 50 58

MÅLESTOK 1:1	DATO 95 01 23
	SIGN KJK

Afdækning

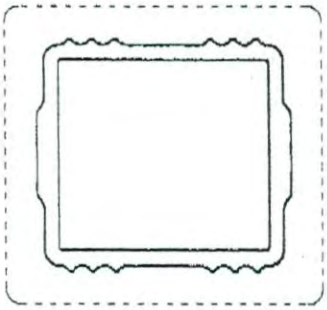
ERSTATNING FOR
Tegning af 89 02 23

TEGN NR
D226007

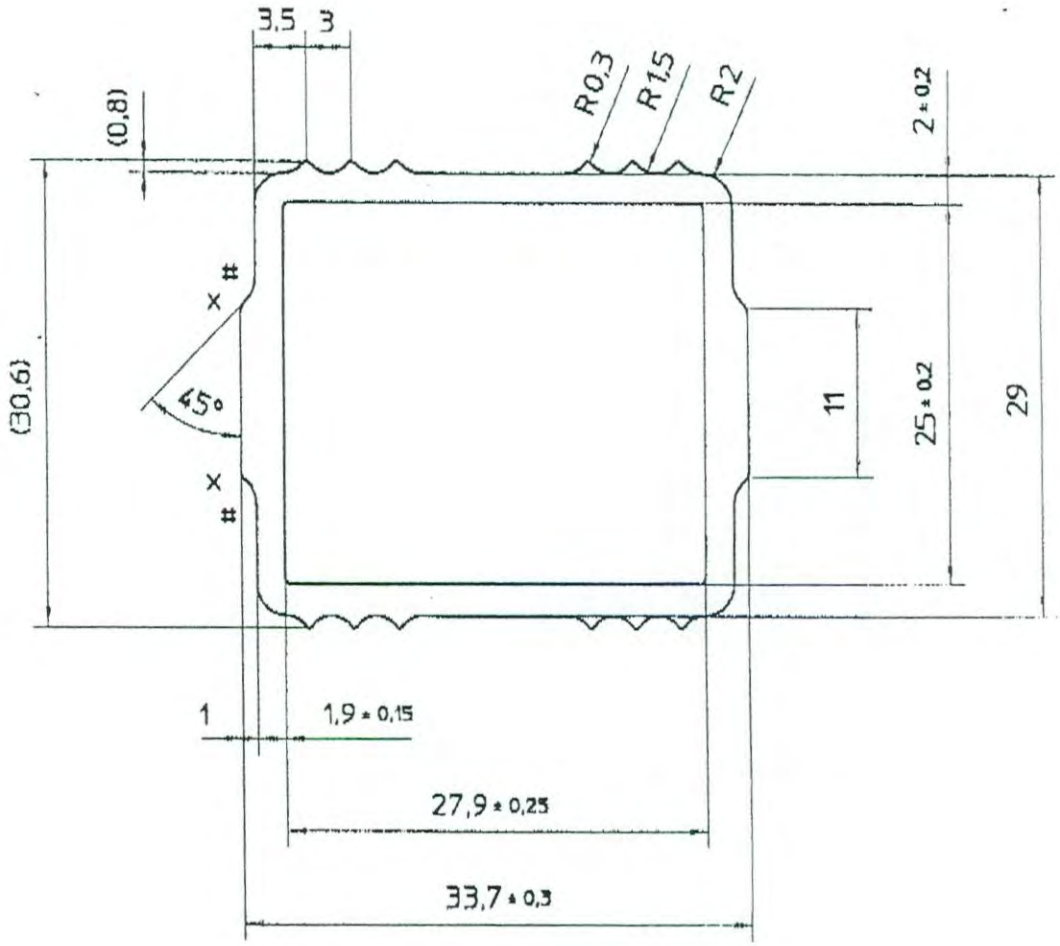
Ikke målsat vægtykkelse
Nicht bemaßte Wandstärke

Ikke målsatte radier
Nicht bemaßte radien
max. 0,4

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



1:1



MODUM INTERNATIONAL

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

MÅLESTOK 2:1

DATO 90 11 08

SIGN KJK

Trinprofil

TEGN NR D224009

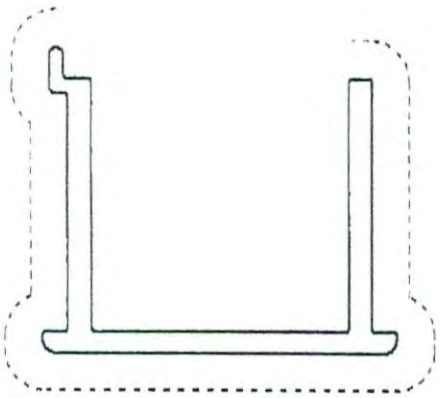
Teorivægt = 0,683 kg pr. m Udvendig overflade = 0,125 m^2 pr. m Ix = 30048 mm^4 Iy = 38407 mm

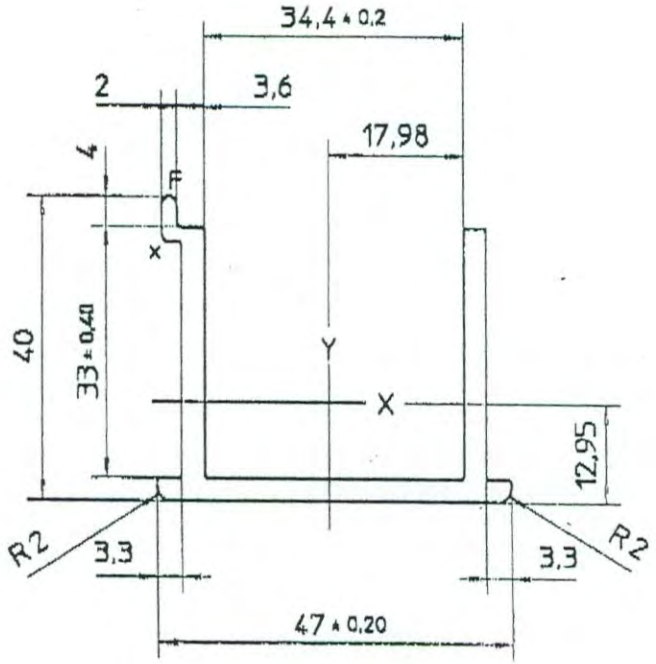
Ikke målsat vægtykkelse
Nicht bemaßte Wandstärke 3,0±0,15

Ikke målsatte radier
Nicht bemaßte radien max. 0,4

F = Fuld radius
o = radius 0.5

x = Radius 1.0
# = Radius 2.0



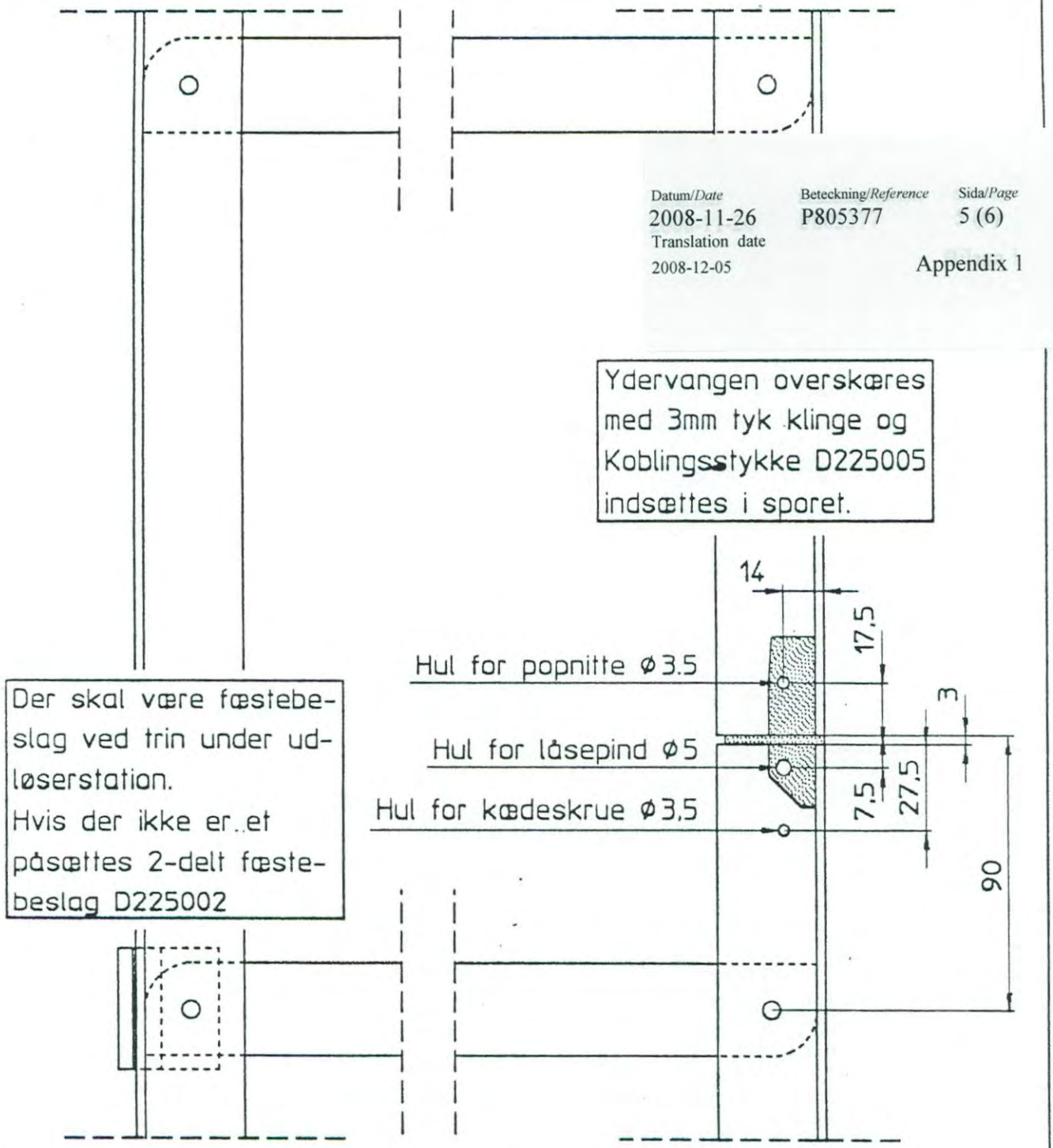


MODUM INTERNATIONAL

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

MÅLESTOK 1:1	DATO 90 11 08
	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



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

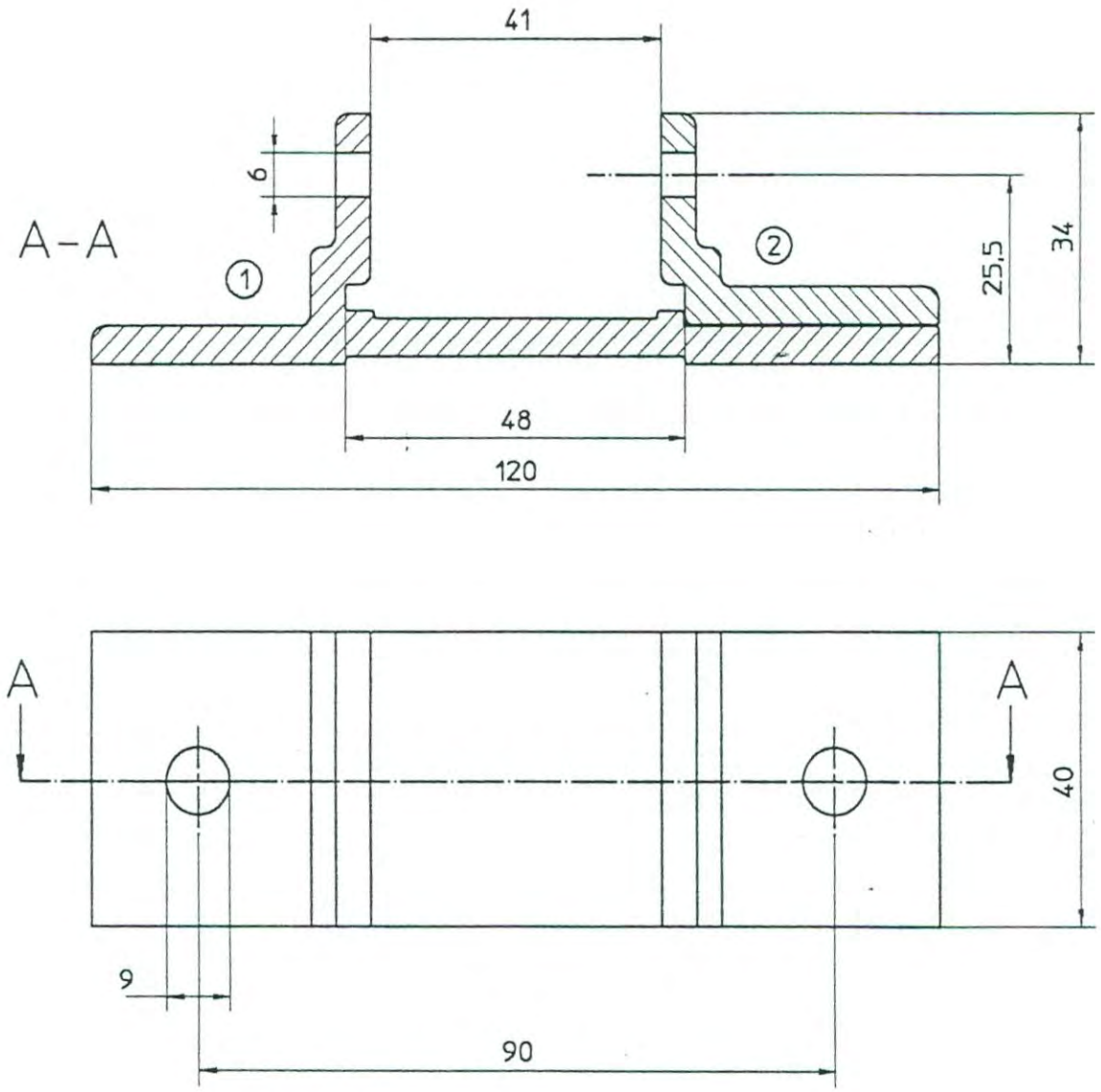
MÅLESTOK 1:2

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**

REPORT
issued by an Accredited Inspection Body

1002
ISO/IEC 17020 (A)

Date 2008-11-26
Reference P805377A
Translation date 2008-12-05
Page 1 (2)

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.

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.

2008-11-10

MODUM SYSTEM

Appendix 1

Modum A/S
Linköpingvej 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 proving

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 stigens 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 færdiga 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

sapa:

Innovative Aluminium Solutions

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:

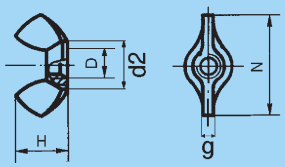
Profile specifications UK

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

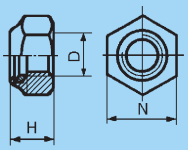


D	N	H	d2	g	FÖRP.	PRIS KRONOR PER 100 ST.	
						A2	A4
M3	17,6	8,6	8	1,6	100	1062	1620
M4	17,6	8,6	8	1,6	100	1134	1422
M5	22,5	11	10,3	2,1	100	1224	1647
M6	27,8	13,6	12,7	2,5	100	1845	2430
M8	30,3	14,8	13,8	2,8	100	2187	2970
M10	36,2	17,7	16,5	3,3	100	3870	4590
M12	49,4	24,1	22,5	4,5	50	9099	10782
M16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

Batch 103000

Acciaierie Valbruna S.p.A.

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

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

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

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

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

Ordine nr: R21775
Bestell/Your order/Commande

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

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

Marchio di Fabbrica:
Zeichen des Liefernwerkes
Trade mark
Sigle de l'usine produtrice

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

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

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

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

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

Marca: MVAISL MAXIVAL
Markenbezeichnung Brand/Nuance

Tolleranza: DIN 671 - h9
Tolleranz./Allowance/Tolerance

Punzonatura: 1.4301/7/304/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 Lange Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahi 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 Prüefung auf lieferbereitem produkt test a l'etat de fourniture Prueba sobre el material asi come entregado

TEST	Provetta/Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg diam epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 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 %	Allungamento E 4d %	Strizione Einschnürung Reduction of area Striction Z %	Strizione RA %	Resilienza Kerbschlagarbeit Impact Value Resilience	Durezza Haerte Hardness Durete HB
Valori richiesti 1 Anforderungen/Required values Valeurs démandées		min max		310	225	620 900	20	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	C %	Si %	Mn %	Cr %	Ni %	P %	S %	N %
min - max 0,030		1,00	2,00	18,00 19,50	8,00 10,50	0,045	0,030	0,100
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 gestellen Anforderungen sind it. Anlage erfüllt
The material has been furnished in accordance with the requirements
Le materiel à eté trouvé conforme aux exigences

Controllo antimescolanza: OK
Verwechslungprüfung: spectralanalytisch durchgeführt
Antimixing testing performed: OK
Contrôle antimelange fait: r.a.s.

Controllo visivo e dimensionale: soddisfa le esigenze
Besichtiguñg 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 VCQ008 (Mod. MCE2)	*Il collaudatore di stabilimento / der Werkssachverständige / Works inspector / L`agent d`usine* M.Rizzotto	Pagina - 1 di 2

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

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

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

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

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

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

Ordine nr: R21775 .
Bestell/Your order/Commande

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

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

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

Marchio di Fabbrica:
Zeichen des Liefernwerkes
Trade mark
Sigle de l' usine produtrice

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

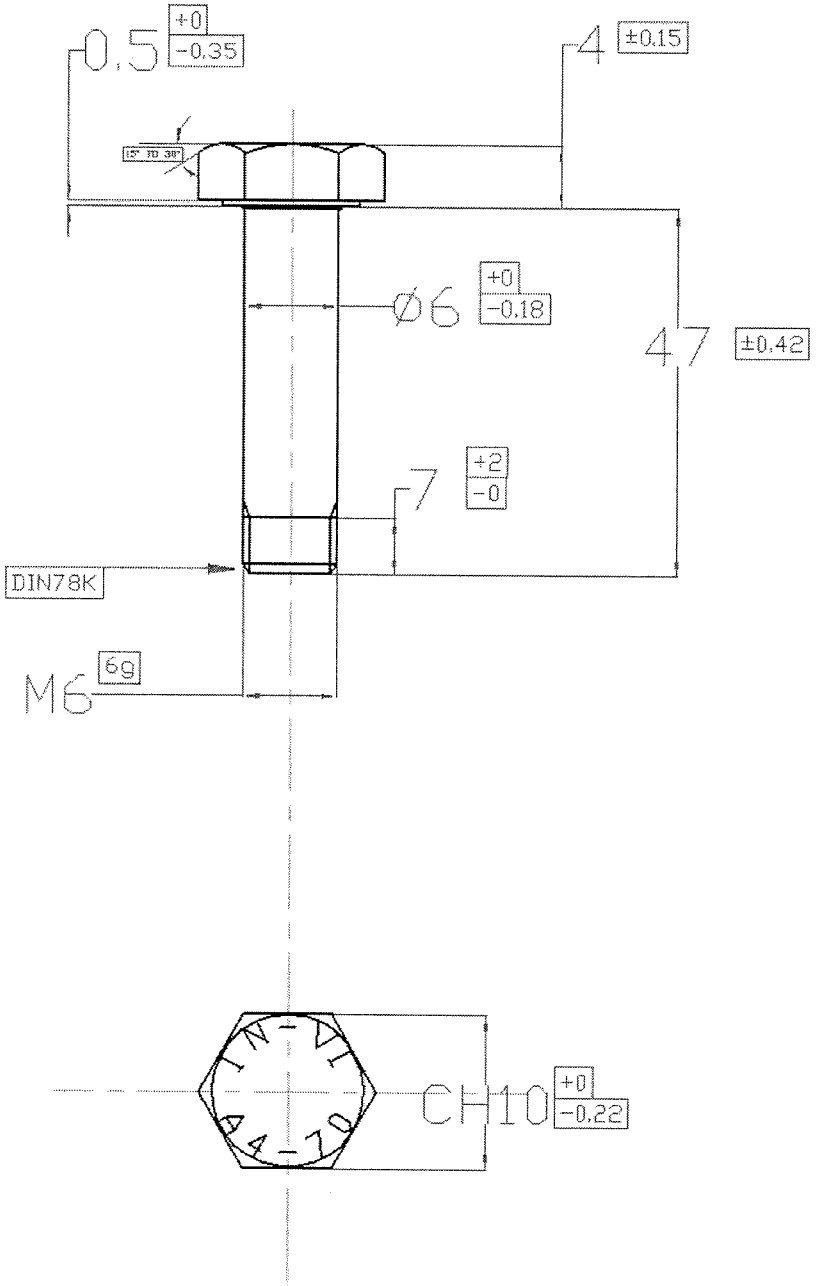
of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.

Maxival 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.

HEJ/HLH

A2686003



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.	