



MANUFACTURING SURVEY ARRANGEMENT

MSA No:
MSA0000BBA
Revision No:
1

Between "Manufacturer"

Teufelberger Seil GmbH
Wels, Austria

and

"DNV"
DNV GL SE
Augsburg

Ref. Recognition Certificate: MSARC0000BBA

This Manufacturing Survey Arrangement (MSA) is applicable to
Steel wire ropes - Intended for Lifting Appliances
subject to testing and inspection for conformance with the requirements of DNV Rules, as stated herein.

The MSA implies that the manufacturer is authorised to perform the testing and inspection without the attendance of DNV and to prepare the certificates which will be validated by DNV.

The MSA is valid until **2026-12-31**

The MSA will, however, be invalid if the Recognition Certificate is invalid, or if the manufacturer's Quality System Certificate No. 2010092004322 is invalid.

The MSA is governed by DNV's general terms and conditions. These may be provided upon request.

Issued at **Augsburg** on **2023-04-14**
A1278561

for **TEUFELBERGER SEIL GMBH**


Ing. Gerhard Beder
Head of QM / HS&E

for **DNV GL SE**


Thaessler, Lutz
Senior Principal Surveyor

1. Scope of Work

This MSA agreement is valid for the Teufelberger Seil GmbH production locations in Wels/Austria and St. Aegyd/Austria.

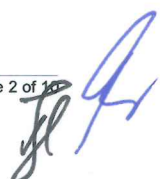
For the above mentioned product(s) to be certified for conformance with DNV Rules, the following conditions will come into force :

Steel wire ropes according to EN 12385 or Teufelberger Seil Ges.m.b.H rope constructions up to 74 mm diameter and their end attachments as following:

No	Rope Construction	Dia. (mm) min.	Dia. (mm) max.	max. Grade (N/mm ²)	Outer strands compacted	Core strands compacted	Core Type	Core plastic cover	Teufelberger Name
1	16 x K6	8	30	2160	Yes	Yes	Metallic	yes	TK16EVO
2	16 x K7	32	42	2160	Yes	Yes	Metallic	yes	TK16EVO
3	16 x K17	44	76	2160	Yes	Yes	Metallic	yes	TK18EVO
4	6 x 19	8	45	2160	No	No	Metallic	yes	QS 609S
5	6 x 19	8	24	2160	No	No	Fiber	yes	PS 609S
6	8 x K26WS	10	50	2160	Yes	Yes	Metallic	yes	QS816V
7	8 x K25F	12	54	2160	Yes	Yes	Metallic	yes	Q8 EVO
8	6 x K36WS	8	44,45	2160	Yes	Yes	Metallic	yes	M6
9	6 x K47WS	50,8	69,85	2160	Yes	Yes	Metallic	yes	M6
10	8 x K36WS	19	73,02	2160	Yes	Yes	Metallic	yes	M8
11	6 x K31WS	22	56	2160	Yes	Yes	Metallic	yes	D6S
12	6 x 26 WS	38,1	50,8	2160	No	No	Metallic	yes	D6
13	8 x K42WS	8	66	2160	Yes	Yes	Metallic	yes	QS816V-dick
14	16 x K19	8	50	2160	Yes	Yes	Metallic	yes	TK19
15	18 x K7	25	40	2160	Yes	Yes	Metallic	no	TK 27EVO
16	18 x K6	13	19	2160	Yes	Yes	Metallic	no	TK 27EVO
17	9 x K19S	20	32	2160	Yes	Yes	Metallic	yes	P9
18	16 x K7	10	33	2160	Yes	Yes	Metallic	no	TK17 EVO

1.1 Reference Documents

- I. DNV rules for classification of Ships – Pt.2.
DNV-ST-0377, Standard for shipboard lifting appliances, latest published edition.
DNV-ST-0378, Standard for offshore and platform lifting appliances, latest published edition.
- II. The manufacturer's documented and accepted workinstructions / procedures for inspection and testing (see Appendix 2)
- III. EN 12385 and EN 13411
- IV. Quality System Certificate ISO 9001:2015 No. 2010092004322, issued by TÜV Austria valid until 2024-09-30.
- V. MPQA Level 3 Report No. MPQA-BOERE-12
- VI. The Manufacturer's authorised staff for conducting inspection and testing within the scope of the MSA (see Annex 1)



1.2 Approvals

This MSA does not exempt the manufacturer from obtaining approval of new material grades or re-approval when a new manufacturing process or heat treatment process is introduced.

1.3 Testing and Inspection

The verification of correct sampling of test specimen as well as all testing and inspection, as defined in the MSA, are entrusted to the manufacturer based on documented and accepted procedures (see Annex 1) and the use of qualified personnel familiar with the DNV Rules.

All class-related non-compliance's are to be agreed by DNV in writing.

The measuring and control devices used for quality control are to be calibrated in compliance with the manufacturer's Quality System.

The manufacturer is authorized to perform testing and inspection acc. to DNV-ST-0377 without the presence of DNV:

- Identification and marking of test samples (single wire and ropes)
- Tensile/Pull Testing of complete rope test samples
- Single wire test
- Rope assemblies manufactured from DNV certified ropes
- Final visual inspection of the rope(s)

The manufacturer has to ensure that all parts are traceable to the DNV and 3.1 Certificates. For DNV certified wire ropes are test samples/tensile test every 10.000m required.

The testing / inspection shall be applied to all products to be certified by DNV under this MSA agreement.

The measuring and control devices used for quality control are to be calibrated in compliance with Teufelberger Seil Ges.m.b.H Quality System.

Products tested and inspected under this agreement shall be marked with the DNV certificate number, see the section for marking. All test/inspection documents/reports shall refer to the DNV certificate no. for traceability to the tested / inspected product. A list of Teufelberger Seil Ges.m.b.H procedures for testing and inspections are listed under Appendix 2.

DNV reserves the right to carry out random inspection and / or extension of inspection of products in each production stage and at any time independent from product or customer purchase order.

1.3.1 Certification of initial length

Initial lengths are normally certified at the rope manufacturer based on a tensile test of the entire rope or alternatively on single wire tests.

Production and testing of ropes are normally based on recognized Standards (e.g. EN12385-4) or specially approved specifications.

1.3.2 Certification of part length

Part length is one or more cutting(s), taken from a DNV-certified initial length. This initial length may either be of own production or sub-supplied from another rope manufacturer with a DNV LA4- / or CG4-Certificate.

The certificate for the part length(s) shall always indicate the certificate number of the original initial length.

Part lengths, that are not taken from a DNV-certified initial length, shall be handled as described in 1.3.1.

1.3.3 Certification of rope assemblies

A rope assembly is a part length, but with rope-end attachments.

The following additional requirements apply (see DNV-ST 0377 § 8.4):

1.3.3.1 Rope sockets

Rope sockets (open and closed sockets), into which wire rope ends shall be socketed, shall conform to standard

EN 13411. On application, other designs need to be approved by DNV. This shall be documented by a Works Certificate, issued by the socket manufacturer. If rope socket design and manufacture is confirmed acc. to a international accepted standard a DNV Type Approval or Case-by-Case approval can be waived. For socketing process using plastic resin shall be conform as prescribed in standard EN 13411-4 and manufacturer's procedure (see Appendix 2). Backfilled material resin and hardener need to be DNV approved. Rope sockets shall be marked with the code letter of the manufacturing company.

1.3.3.2 Wrought ferrules

Wrought aluminium alloy ferrules shall conform to EN 13411-3 and manufacturer's procedure (see Appendix 2).. Flemish eyes as per DIN 3095 shall be used wherever possible for the end attachments of the hoisting and luffing ropes of lifting appliances if the lifting appliances are working with grabs. On application, swaged or rolled end fittings (terminals) may be DNV approved. Application of a.m. ferrules may only be carried out by approved companies.

1.3.3.3 Detachable end joints

Cable joints (wedge clamps) may only be used if the ropes are permanently under tension. They shall be clearly visible and readily accessible, to facilitate inspection.

The free end of the rope shall be secured from being pulled through, e.g. by rope sockets. The safeguard connection of the rope end to the load-bearing part of the rope shall not be force-transmitting. However, it shall be capable of bearing 10% of the rope tension FS.

Cable joints shall correspond to EN 13411-6. Up to a rope diameter of 8 mm, EN 13411-7 may also be applied. Rope sockets as per EN 13411-5 are not permitted. This does not apply to the securing of free rope ends to cable joints. For material testing the design temperature of the intended lifting appliance shall be considered. Rope Sockets and other accessories need to fulfill, if not otherwise agreed, the material requirements at a design temperature of -20°C.

1.3.3.4 Handling of installation aids

Installation aids, like tail ropes, may be fitted permanently to the rope for the purpose of installing the rope on the intended lifting appliance. These installation aids must not be used for any lifting operation of the final lifting appliance and need therefore not to be certified by DNV. The manufacturer must clearly state this limitation either as remark in the LA4-Certificate or in the Purchase Order Confirmation to the customer.

1.3.3.5 CG4-Certification of ropes and rope assemblies

CG4-Certification acc. to DNV-ST-0378/DNV-ST-0377 is based on ILO Convention No. 152 and shall therefore not be conducted under the conditions of an MSA. Testing shall be witnessed by DNV and documented by a CG4 Certificate. Alternatively, an ILO Form 4 certificate issued by an IACS class or by a "Competent Person" as defined in ILO Convention 152 and accredited by the Administration may be accepted on case by case decision.

1.4 Assessments performed by DNV

Compliance with the conditions agreed in this MSA is subject to control and review by assessing as follows:

- a) Periodical assessments of the MSA function are to be made at 6 months intervals, based on a mutually agreed schedule.
- b) Inspections and witness of breaking tests by the DNV Surveyor to ensure compliance of the products with the DNV Rules requirements (DNV reserves the right to carry out inspections in the office, production site and warehouse)
- c) Project-specific assessments or unscheduled spot checks may be made to ensure compliance of the products with Rule requirements.

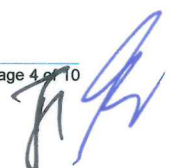
For this purpose DNV shall at all reasonable times be given access to the manufacturing plant and to the relevant manufacturing documents and records.

1.4.1 Agenda for the MSA assessments

The agenda for the assessments will be proposed by DNV in the notification of the meeting.

The agenda may typically contain:

- a) Organisation, responsibilities and qualifications of relevant personnel.
- b) The efficiency of the implementation of the MSA.



- c) Operational procedures and instructions related to the MSA agreement.
- d) Manufacturing processes, inspection and testing.
- e) Test records.
- f) Castings, materials, properties and applications.
- g) Product marking and traceability and control of non-conforming product.
- h) Claims, question from clients and others.
- i) Review of possible problem areas raised from previous MSA assessments.
- j) Review of reports from Quality System Audits.
- k) Information to be updated.
- l) Statistical results from testing.
- m) Review of the Quality System Audit reports in connection with ISO QSC.
- n) News from DNV.

Any problems found should be handled as non-conformities in the QSC implemented corrective action system. Corrective actions will be re-assessed by DNV.

1.4.2 MSA is not applicable for

- Products for delivery to installations for which DNV-ST-0377 or DNV-ST-0378 do not apply
- Products which have been returned to the Manufacturer for reconditioning
- Products to be certified by DNV on behalf any other Classification Society or repair
- Repair of steel wire ropes
- Certification and issue of DNV Certificate CG4
- Certification of wire ropes older than 10 years

2. Reporting by manufacturer

2.1 Manufacturing Records

Teufelberger Seil Ges.m.b.H. is to maintain and trace manufacturing records for each product to be certified, eg. Material certificates and testreports, can be traced for each unit. The records are to be kept for at least 10 years.

In order for DNV to verify the product certification, the following documentation are to be supplied to DNV:

- Test Record and Works Record documentation
- Works certificate wire rope
- Customer Purchase Order / order confirmation
- Works Certificates of wire rope equipment like spelter socket
- DNV Design Approval for rope sockets, that do not comply with EN 13411
- Draft Certificate LA4

For sockets delivered as separate parts/individual components by the manufacturer, DNV product certificates / CG3 if required shall be provided.

2.2 Works certificate

For each product to be certified under this agreement, the manufacturer shall prepare a LA4 product certificate. The certificate shall:

- Reference to the applicable DNV Rules.
- Reference the MSA agreement no.
- Fulfil the requirements to LA4 acc. to DNV-ST-0377.
- Contain all relevant information as required by the DNV Rules.
- Under marking of the product state the DNV certificate no.

A copy of the LA4 certificate is to be retained by the manufacturer as quality records and the retention period is to be as stated in the Quality System Manual.

By submitting and/or registration of the LA4 certification documentation request in the DNV Portal the manufacturer is declaring full compliance with this MSA agreement.

2.3 Non-conformances

The manufacturer is to report any deviation from the DNV Rules and this MSA and obtain DNV's written approval prior to dispatch of the product.

2.4 Information to DNV

The manufacturer is to report any purchaser requirement, which may extend the scope defined in the DNV Rules. Any additional requirements outside of the DNV Rules are not covered by this MSA.

All customer complaints to products delivered under this MSA agreement shall be reported to the DNV local office. A procedure for reporting of customer complaints has to be established by the manufacturer and approved by DNV. It is up to DNV to decide if further involvement is necessary or not at that time. However, closing of customer complaints reported to DNV and corrective actions implemented by the manufacturer will be discussed under the MSA assessment.

2.5 Testing laboratory

In case testing (breaking load) of wire ropes is carried out at an external laboratory, i.e. not at the Manufacturer's premises in Wels, St. Aegyd or company Redaelli in Gardone Val Trompia, Italy, DNV Surveyor's presence may be waived after agreement e.g. European laboratory accredited for the required tests by an accreditation Body being member of European accreditation, EA.

Evidence of relevant accreditation/recognition of the testing laboratory shall be sent by the Manufacturer to DNV for each product certification/at regular intervals as applicable.

3. Reporting by DNV

3.1 Issuance of DNV certificates

DNV will create a product certificate based on the manufacturer's works certificate. The digitally signed certificate will be sent to the manufacturer.

3.2 Information to manufacturer

DNV will inform the manufacturer of new or amended rules and regulations which would affect the arrangements authorised.

Reserved certificate numbers to be used for certification based on this MSA agreement will be communicated to the manufacturer.

3.3 MSA assessments

After each assessment a report will be prepared by DNV and distributed to the involved parties.

4. Marking for Identification

4.1 Marking

Products which have been satisfactorily tested and inspected shall be marked as required by the DNV Rules. The product is further to be marked with the DNV certificate number and a VL-stamp furnished by DNV and in acc. to the manufacturer procedure (See Appendix 2). Only those products covered by this arrangement are permitted to be marked with this stamp. The manufacturer's authorized staff for conducting stamping (see Appendix 1).

4.1.1 Rope identification and Marking

- 1) Label on reel – The label is marked with DNV certificate number and NV-stamp
- 2) Acc. to DNV-ST-0377 the rope itself has to include woven-in identification bands (manufacturer identification NV-106) and coloured identification threads for strength grade :

Manufacturer identification :
Strength grade 1770 N/mm² : green
Strength grade 1960 N/mm² : yellow
Strength grade 2160 N/mm² : blue

- 3) Marking of end attachments :
Each rope with end attachment must be marked permanently with DNV certificate no. and N.V. stamp, SWL (tonnes)

4.2 Handling of the NV-stamp(s)

The manufacturer's signer of the MSA agreement is kept responsible for the NV-stamp(s) provided to them as part of this agreement, and the stamp(s) shall only be used by authorised personnel.

The NV-stamp(s) must not be transferred to subsidiary companies belonging to the same group or any other third party.

A worn out or damaged NV-stamp is to be returned to DNV who will supply a new stamp.

The NV-stamp(s) shall be returned to DNV when the MSA agreement is invalid.

5. Monitoring and Administration of the MSA

The DNV Augsburg Office is responsible for:

- 1) Follow up of the MSA through the periodical MSA assessments.
- 2) The regular contact with the manufacturer.
- 3) Review of works certificates.
- 4) Issuing DNV certificates.
- 5) Invoicing.

6. Fees and Payment Terms

Certification fees will be charged in accordance with DNV's standard fees for manufacturers holding a certified QSC and having implemented a MSA or in accordance with special written agreements, to be updated annually.

7. Regulation for the Certification Services

Regulations with respect to obligations, publications, suspension, withdrawal/cancellation and appeal are given in DNV CLASS PROGRAMME No. DNV-CP-0337 "General description of services for certification of materials and components", Section 2 [7].

8. Validity

Any changes in production process, procedures or other matters that may influence the validity of the Recognition Certificate, the MSA agreement or the conditions stated therein are to be submitted to DNV for evaluation.

The MSA will be invalid if:

- a) The Recognition Certificate is invalid.
- b) The DNV Approval of Manufacturer Certificate(s) / Type Approval Certificate(s) is invalid.
- c) The QSC is invalid.
- d) The possible non-conformities from the MSA assessments are not responded to and/or corrective actions are not implemented within the agreed time.
- e) The manufacturer does not comply with the obligations of the MSA agreement.
- e) The certification fees are not paid in due time.

Either party shall have the right to terminate this MSA subject to three months written notice.

9. Liability and Indemnity

If any person suffers loss or damage which is proven to have been caused by any negligent act or omission of the Society, the Society shall pay compensation to such person for his proven direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question. The maximum compensation shall never exceed USD 2 million.



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In this provision the "Society" shall mean DNV AS as well as its direct and indirect owners, affiliates, subsidiaries, directors, officers, employees, agents and any other person or entity acting on behalf of DNV AS.

10. Law and Jurisdiction

This MSA shall be governed and construed in accordance with the laws of Norway.

Any dispute arising in relation to or as a consequence of this MSA, which cannot be settled amicably through negotiations between the parties, shall be subject to the courts of Oslo, Norway.

A handwritten signature in blue ink, consisting of stylized initials and a surname, located in the bottom right corner of the page.

List of personnel, authorised to perform stamping in compliance with the


MSA No. MSA0000BBA

Mr. Johann Schwabeneder


Mr. Thomas Ortner

Mr. Markus Imböck

Wels / Augsburg, 2022-12-30



Mr. Gerhard Beder
for Teufelberger Seil Ges.m.b.H



Mr. Lutz Thäsler
for DNV GL SE, Station Augsburg

Appendix 2:

The manufacturer's documented workinstructions/procedures for inspection and testing:

Instruction Wire Inspection	-	No. 22.6 Rev.8
Instruction Wire rope bend hight and bend length	-	No. 22.1 Rev.3
Instruction Schlaglänge	-	No. 22.2 Rev.2
Instruction Spulerei	-	No. 25-42-27 Rev.1
Instruction Drall	-	No. 26-5 Rev.3
Instruction Wire rope test	-	No. 24.1 Rev.4
Instruction Lieferantenbewertung	-	No. 40-10-02 Rev.2
Instruction Release of Suppliers	-	No. 40-10-01 Rev.4
Instruction Ablauf von Fehlermeldungen	-	No. 50-10-04 Rev.6
Instruction Berechtigungsprüfung	-	No. 25-43-05 Rev.2
Instruction Procedure Customer Claims	-	No. 50-10-05 Rev.2
Instruction PA WR Strang	-	No. 24.1 Rev.4
Instruction Issue Testcertificate and Marking	-	No. 50-20-01 Rev.5
Instruction of Resin Socketing	-	No. 25-44-06 Rev.3
Instruction Grouting of aluminium alloy ferrules	-	No. 25-44-11 Rev.2

