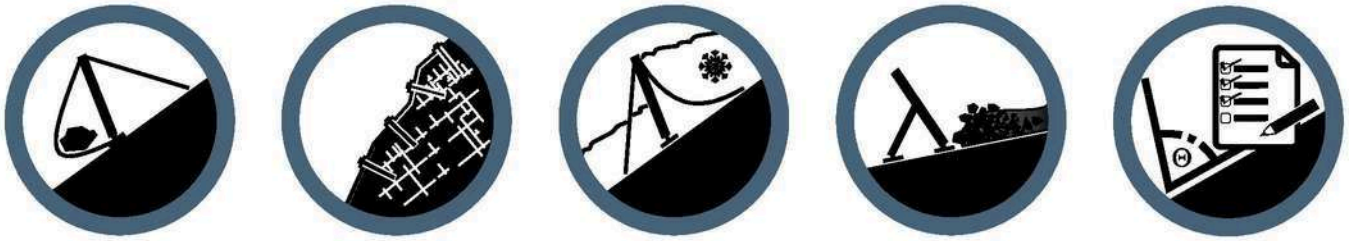
Safe Soil

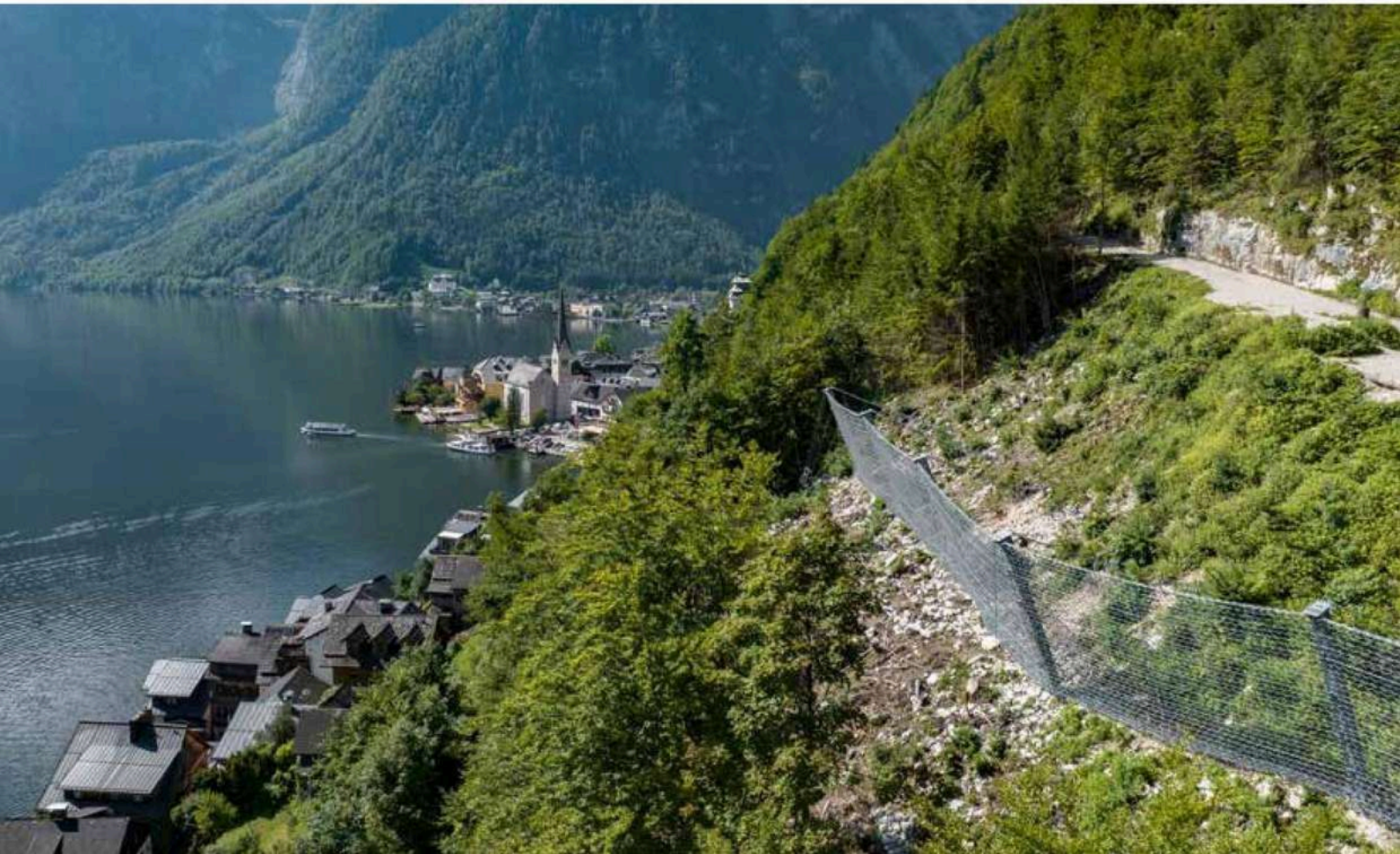
Geotechnical Systems

Partnership with TRUMER

TRUMER Schutzbauten



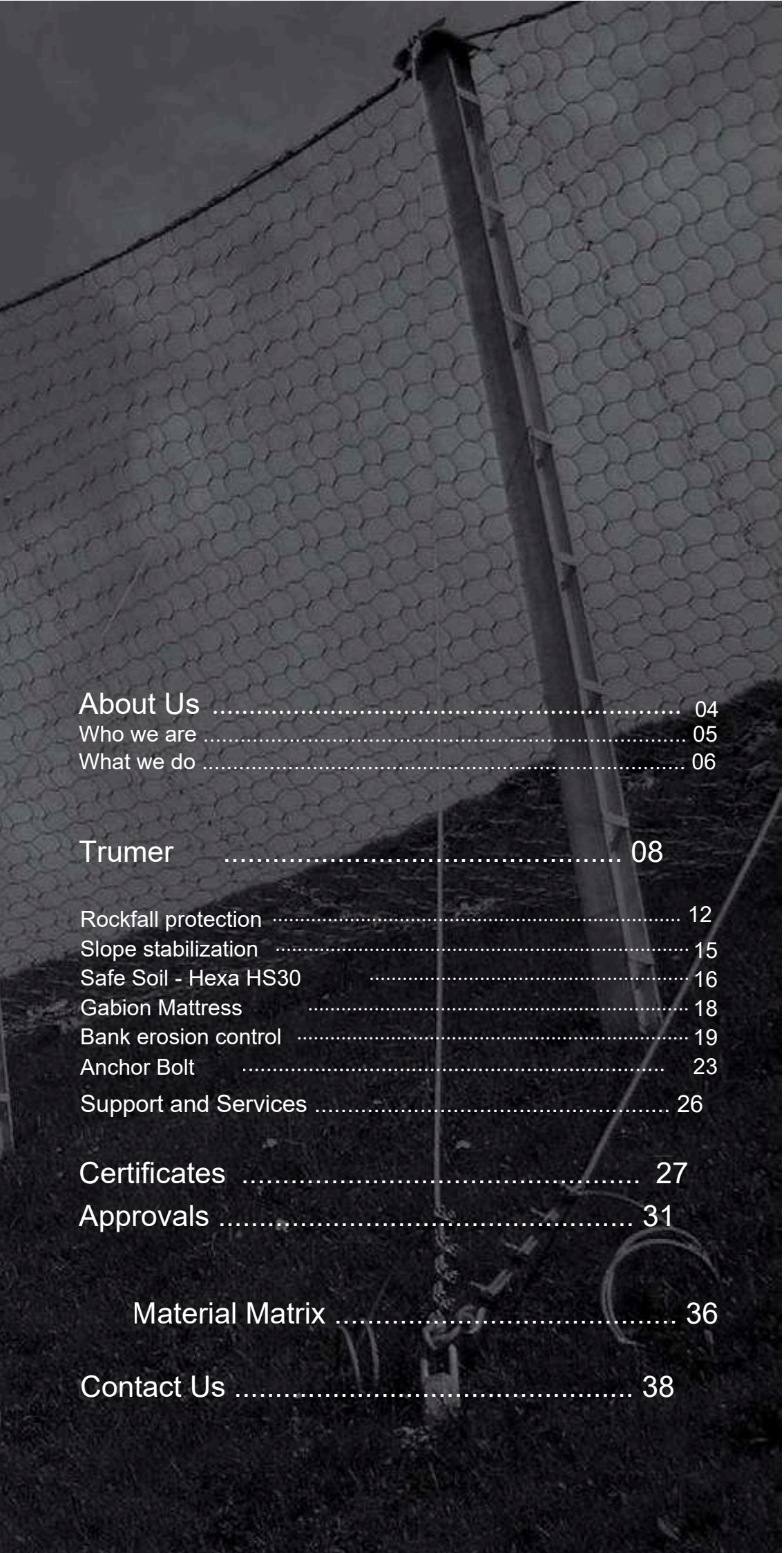
Safety without compromise



SAFE

EFFECTIVE

ECONOMICAL



Safe Soil

Geotechnical Systems

ISO9001:2015 CERTIFIED

AUSTRIA

CE

About Us

Safe Soil Co is a trusted supplier and authorized agency specializing in a wide range of advanced systems and technologies tailored for infrastructure and soil solutions across Saudi Arabia. Backed by numerous approvals and strong authorizations from key industry bodies, Safe Soil stands as a reliable partner committed to delivering innovative, high-quality products and services. Our extensive expertise and certifications demonstrate our capability to meet the rigorous standards required for infrastructure safety and soil engineering projects, ensuring exceptional trust and confidence for our clients and stakeholders throughout the Kingdom.Our extensive network of approvals and authorizations from leading regulatory bodies underlines our commitment to delivering products that meet rigorous technical specifications and quality benchmarks we guarantee that our technologies and systems integrate seamlessly into projects, providing reliable, effective, and compliant solutions that enhance infrastructure safety and soil stability across Saudi Arabia.

» Who we are

Safe Soil is a premier supplier and agency dedicated to delivering innovative infrastructure and soil technologies across Saudi Arabia. Central to our offerings is the advanced TRUMER technology, renowned worldwide for its excellence in natural hazard protection solutions, specialize in soil injection systems that enhance ground stability and mitigate risk, playing a critical role in safeguarding infrastructure in diverse environments.

We offer solutions for protection from natural hazards like:

- ✓ Rockfall Barriers
- ✓ Slopes Stabilization
- ✓ Hexa Netting
- ✓ Roch Anchors
- ✓ Soil Injection
- ✓ Gabion

Following our motto:

SafetybyCompetence-SafetywithoutCompromise

Manufactures safe, effective and economical solutions.

» Our Mission

As a trusted partner, Safe Soil holds multiple industry approvals and authorizations that underscore our adherence to the highest standards, that fortify infrastructure resilience, support sustainable development,

» Our Vision

Driven by a commitment to quality, reliability, and cutting-edge solutions, achieved through strategic collaboration with contractors and consultants who share our vision for excellence.

» What we do

Soil protection enhances environmental sustainability and strengthens project resilience across Saudi Arabia. Our specialized offerings include world-class solutions for rockfall protection, stabilization of unstable slopes, shallow landslide mitigation, debris control, soil injection, bank erosion prevention, and gabion systems.

- Omega-Nets AVT and GDV
- brake systems Middle
- rope solutions for limited deflection
- Integrated rope guides

Full scale tests of protective structures and individual components are the basis of our product development.

Partners with major contractors and consultants to provide systems that meet strict regulatory standards and industry best practices. Our features internationally recognized innovations such as TRUMER hazard protection technology, engineered to safeguard assets and support development.

Our Brands

TRUMER Schutzbauten


TRUMER

TRUMER Schutzbauten

Trumer Schutzbauten GmbH
Maria Buehel-Strasse 7
A-5110 Oberndorf
Austria

to

Safe Soil Co. (Engineering, Assessment, Testing)
Represented by:
Fozan Abu Shihab
Riyadh
Kingdom of Saudi Arabia

Oberndorf, 04.02.2025

TO WHOMSOEVER IT MAY CONCERN

We hereby certify, that **Safe Soil Co.** are the authorized and exclusive distributors of Trumer Schutzbauten's entire product portfolio in the range of natural hazard protection such as Rockfall Fences, Slope Stabilization, Debris Flow and Shallow Landslide Barriers as well Snow Avalanche Fences.

Safe Soil has the authority to promote, sell, distribute and accept orders for above mentioned products within the territory of the Kingdom of Saudi Arabia.

This agreement is valid until 31. Of December 2026 from the date of issue, and is intended to be renewed yearly thereafter, when both parties mutually consent.

Trumer Schutzbauten GmbH

Dipl.-Ing. Felix Draesner

Sales and Project Manager

Trumer Schutzbauten GmbH

About us

» Who we are

TRUMER Schutzbauten - your competent and experienced partner when it comes to structures for protection against natural hazards. TRUMER was founded in 1991 in Obertrum near Salzburg, Austria. Our globally active teams consist of experienced engineers, geologists and technicians who develop projects and product solutions, which are fabricated in our state-of-the-art production facility.
We offer solutions for protection against natural hazards such as rockfall, unstable slopes, debris flows, shallow landslides and avalanches.

True to our principles:

Safety through competence - Safety without compromise

» What we do

As one of the world's leading companies in geohazard mitigation, TRUMER Schutzbauten uses its many years of experience to develop and produce protective structures to protect communities and infrastructure.

In order to meet the variable and complex challenges in natural hazard protection, we are continuously working together with geotechnical engineers, installation companies and academic and government agencies on the further development of our protection systems within the framework of international cooperation.

With our expertise, we develop, produce and supply customized protective structures that are adapted to the specific conditions and requirements at the installation site.

Our EN 1090 certifications enable us to manufacture complex steel construction products for individually dimensioned protection systems and to guarantee the reliability of our protection through consistent in-house production control.

As an ISO 9001 certified company, the processes outside of production are therefore also strictly implemented as part of our quality management system in order to guarantee safety without compromise for our protective structures.

TRUMER offers comprehensive advice and support for the protection of natural hazards, including the planning, installation and maintenance of protective structures, as well as customized solutions and calculation tools for our customers.

Rockfall Fences

Rockfall is typically theresultof various detachment processes where rocks and boulders break loose from rock faces, slopes or embankments. The most common causes of rockfall are weathering and erosion, seismic activity or human influence.

To limit the consequences of falling rocks and boulders, our dynamic rockfall protection systems are used as technical protective measures in transit and deposition zones.

TRUMER offers tested protection systems of all energy classes from 100 kJ to over 4500 kJ (classes 0 - 8), which have been tested and evaluated in accordance with EAD 340059-00-0106. They also fulfill the strict requirements of the Austrian and Swiss application guidelines.
TRUMER rockfall protection fences are characterized by their simplicity and high safety reserves.

More information and our brochure *Rockfall Protection* **are available at...**

www.trumer.cc

» Maximum safety, advanced technology, certified quality

» HINGED POST SYSTEMS

Hinged rockfall protection systems have a base plate that is independent of the post. This type of system is the most commonly installed rockfall protection fences. They have a lower weight - especially lighter posts - and are therefore simple, flexible and adaptable to the most extreme site conditions.

» FIXED POST SYSTEMS

Fixed post rockfall protection systems consist of stronger posts with an integrated base plate. The result is a self-supporting post that does not require retaining ropes at the post head. The advantages are the smaller footprint of the structure and the ease with which it can be cleared after an incident.

» HYBRIDS & ATTENUATORS

In hybrid and attenuator systems, no lower bearing ropes are used at the post bases. Falling debris is allowed to pass through the system in a controlled manner to be deposited at the foot of the embankment.
The advantage of hybrid and attenuator systems is that clean-out of the system is greatly simplified, with lower overall maintenance efforts required.

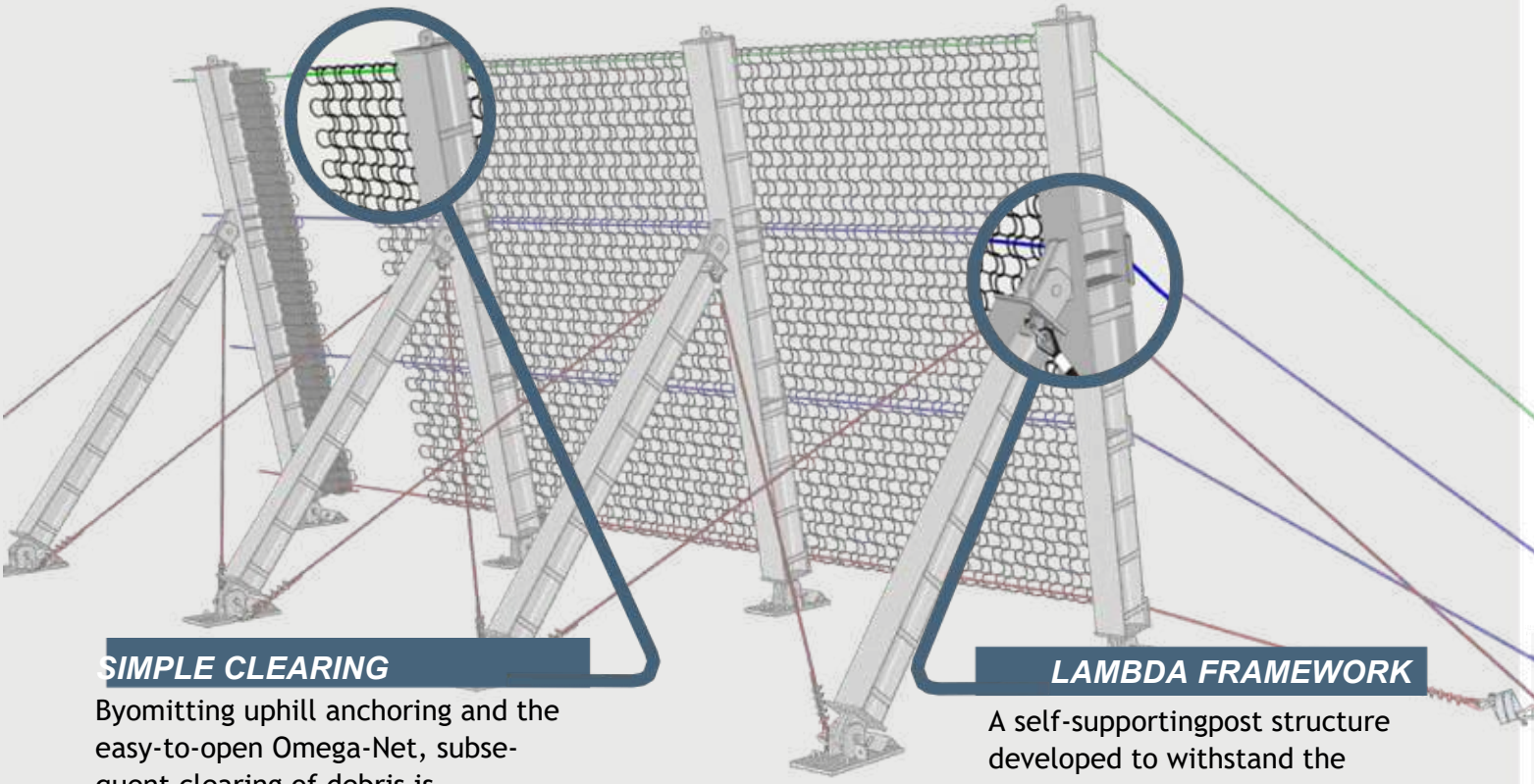
» VERSATILITY

Thanks to our wide range of rockfall protection systems, we are remarkably adaptable to different needs and conditions.

» QUALITY MANAGEMENT

TRUMER Schutzbauten GmbH is certified according to ISO 9001. Our effective quality management control guarantees the highest quality and durability of our protection systems.

What sets us apart



SIMPLE CLEARING

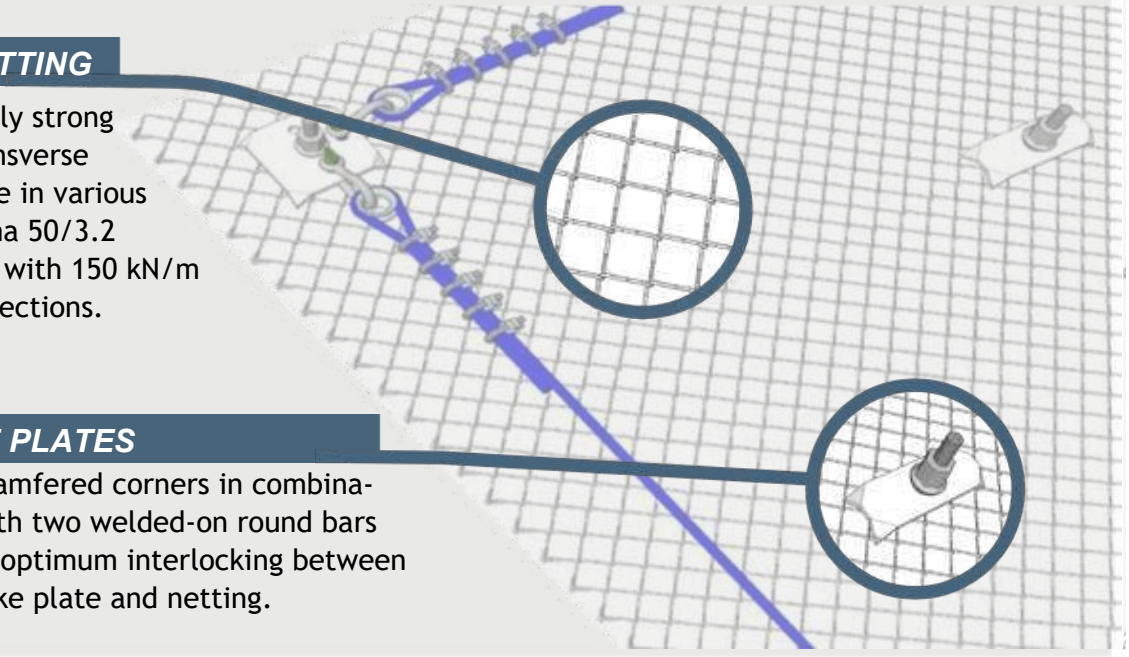
Byomitting uphill anchoring and the easy-to-open Omega-Net, subsequent clearing of debris is extremely straightforward.

LAMBDA FRAMEWORK

A self-supportingpost structure developed to withstand the highest load requirements of debris flows and avalanches.

HIGH-STRENGTH NETTING

TRUMER nettings are equally strong in the longitudinal and transverse directions and are available in various strengths, such as the Sigma 50/3.2 made of 1770 N/mmS wire with 150 kN/m tensile strength in both directions.



SPIKE PLATES

The chamfered corners in combination with two welded-on round bars ensure optimum interlocking between the spike plate and netting.

Slope Stabilization

Unstable slopesoccur when thestability ofanatural slopeor an artificialslope is disturbed. Causes ofunstable slopes include changes inthe amountand intensity of precipitation, ground water, ground shaking, undercutting or other extreme events. These various causes are exacerbated by climate change.It can therefore be assumed that the number and frequency of the occurrence of unstable slopes will increa- se significantly in the future.

The use of anchored wire netting and cable nets are a primary measure against the detachment of individual blocks or the disposition of unstable area. Furthermore, they offer nature the opportunity to reclaim stabilized areas with new vegetation.

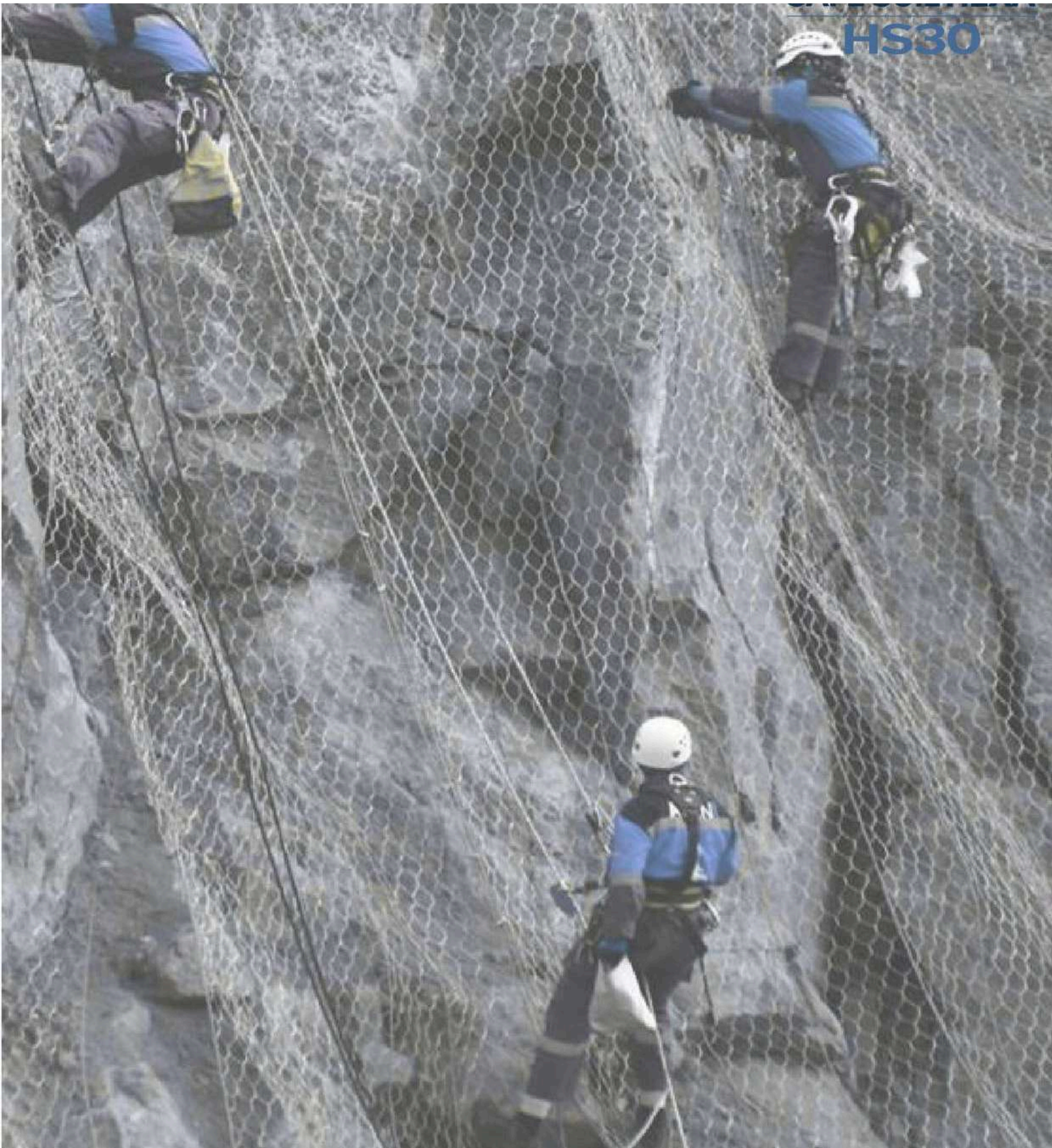
More information and our brochure *Slope Stabilization* **are available at...**

www.trumer.cc

Safe Soil
Geotechnical Systems

SAFE SOIL HEXA
HS30

HEXA HS30 – High Strength Reinforced Steel Mesh System



» Isotropically loadable slope, rock and single block stabilization

» DRAPE NETTING

In drape netting systems, wire mesh or wire rope nets are suspended at the crest of the rock slope with a bearing rope. From this upper rope, nets or netting hang like a curtain in front of the rock face. Debris can still come loose from the rock, which are then transported in a controlled manner behind the system and deposited at the toe of the slope, typically in a catchment ditch, where it can be cleaned out during routine maintenance.

» ANCHORED NETTING

Anchored or nailedslope stabilization systems consist of netting that is fastened in a grid with rock or soil nails and spike plates. The spacing and installation location of the nails is determined by the design event and the topography of the slope. The system is designed to withstand the loads and retain the material in place, thus stopping erosional processes.

» ANCHORED CABLE NETS

As with wire mesh netting, cable nets are also attached to the slope using soil or rock anchors and spike plates. The decisive difference is the load-bearing capacity. With wire rope nets, such as the Omega-Net or the diagonal cable net, very large blocks can be held back.

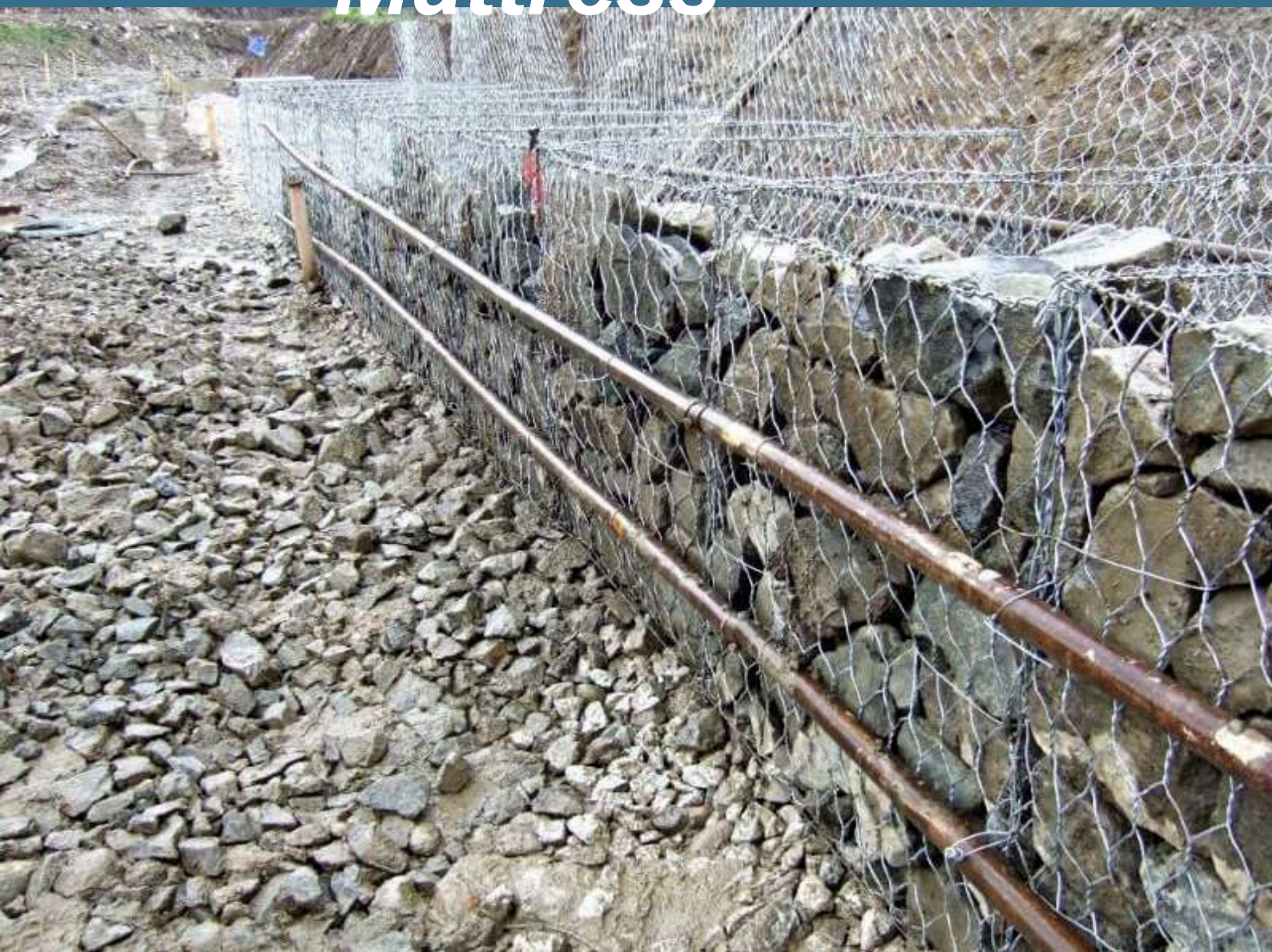
» REVEGETATION

The stabilization of embankments promotes natural revegetation, which contributes to the long-term preservation and promotion of ecological diversity.

» FREE DRAINING

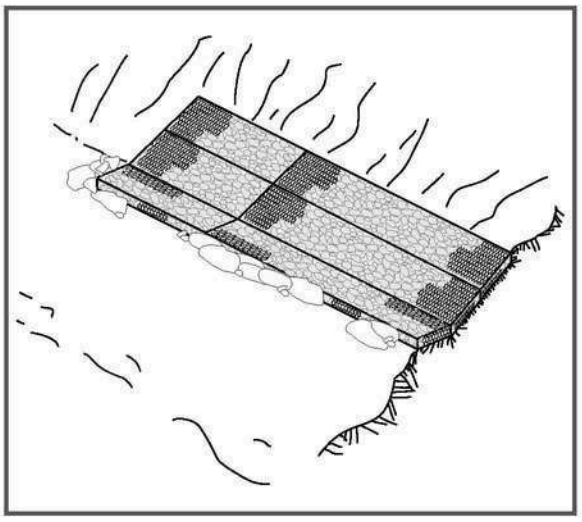
The free drainage of embankment protection systems ensures effective drainage of pore and fissure water and allows the infiltration of precipitation.

Gabion Mattress



Bank erosion control system

Revet Mattress - Data Sheet



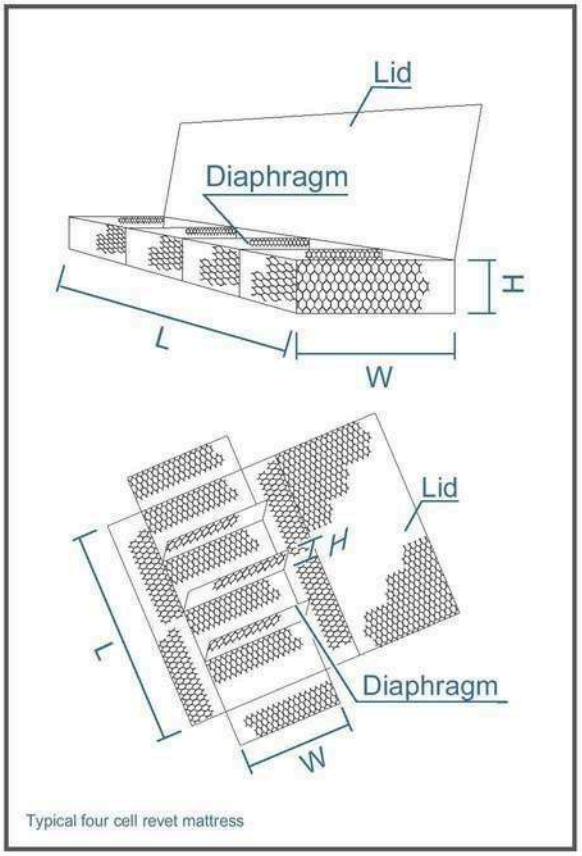
Area of Application:
TRUMER revet mattress boxes were developed for river embankment protections to stabilize the banks of the river and prevent erosion. For water management purpose, these mattresses are often used for scour protection in order to prevent bed and side erosion processes. In areas affected by natural disasters they are also used to channel river sections.

Material:
TRUMER mesh mattresses consist of galvanized or galvanized with PVC coated double twisted hexagonal woven mesh wire. All TRUMER mattress products are manufactured in accordance with the European Technical Approval.

Installation:
Different sizes of TRUMER revet mattresses consist of single boxes with diaphragms and one lid. Alternatively rolls of mesh can be used to complete the mattress. Seams are made using either lacing wire or high-tensile steel ring fasteners.

Advantages:
Under most conditions, the revet mattresses can be easily and quickly installed, thereby considerably reducing costs. Furthermore, corrosion protection is assured by a high-quality of metallic or PVC coating that increases the life and durability of the gabions.

Revet Mattress Dimensions



Typical four cell revet mattress

Trumer Schutzbauten Canada Ltd. • 720 - 999 West Broadway • Vancouver, BC • Canada V5Z 1K5
Toll Free.: 1(855)732-0325 • Local: (604)732-0325 • www.trumer.cc

TS Gabion

More information and our brochure *Slope Stabilization* **are available at...**

www.trumer.cc

TS Gabion

More information and our brochure *Slope Stabilization* **are available at...**

» Multifunctional and robust protection with supporting effect.

Gabion boxes are found all over the world for decades as rockfall and slope erosion protection.

TRUMER offers the following gabion products:

- Gabion boxes made from double twisted hexagonal mesh
- Gabion boxes made from spot-welded mats

Gabion boxes nowadays are used in the following areas:

- Retaining structure, e.g. at the slope toe
- Bank erosion protection
- Undercutting protection
- Structural hydraulic engineering
- Noise control and blinds
- Landscaping

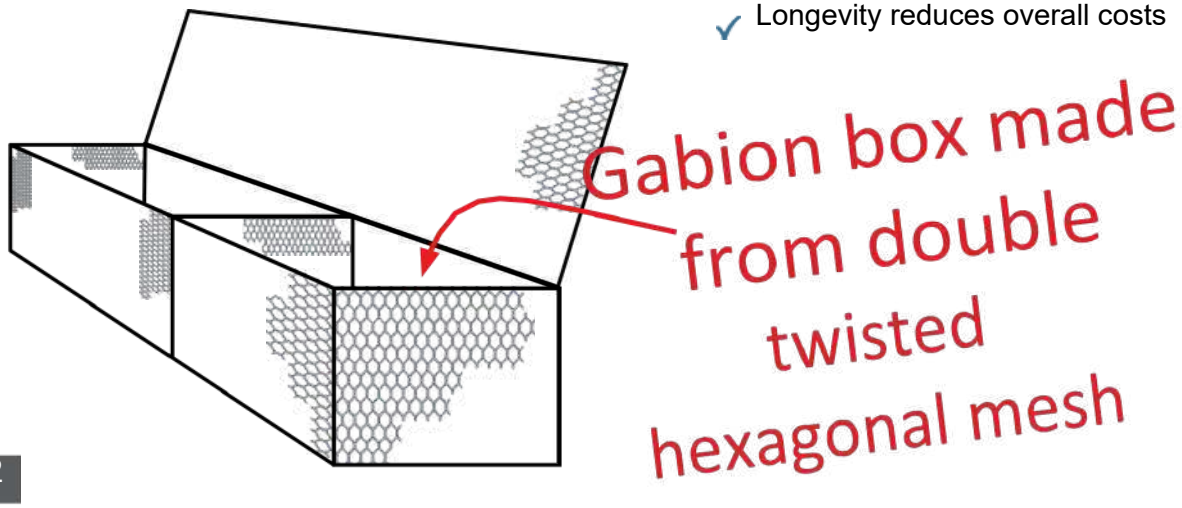
TRUMER gabion boxes are made of high-quality wire and have an extremely resistant corrosion protection.

» Technical advantages

- ✓ Flexible and lasting solution
- ✓ In constrast to traditional support structures, they are capable of drainage over the entire period of operation
- ✓ Easy and quick installation
- ✓ Aesthetic appeal Extremely long-lasting
- ✓ corrosion protection due to Zn or ZnAl galvanizing according to EN ISO 1461 and EN 10244-2
- ✓ Low CO2 footprint compared to traditional reinforced concrete torrent structure

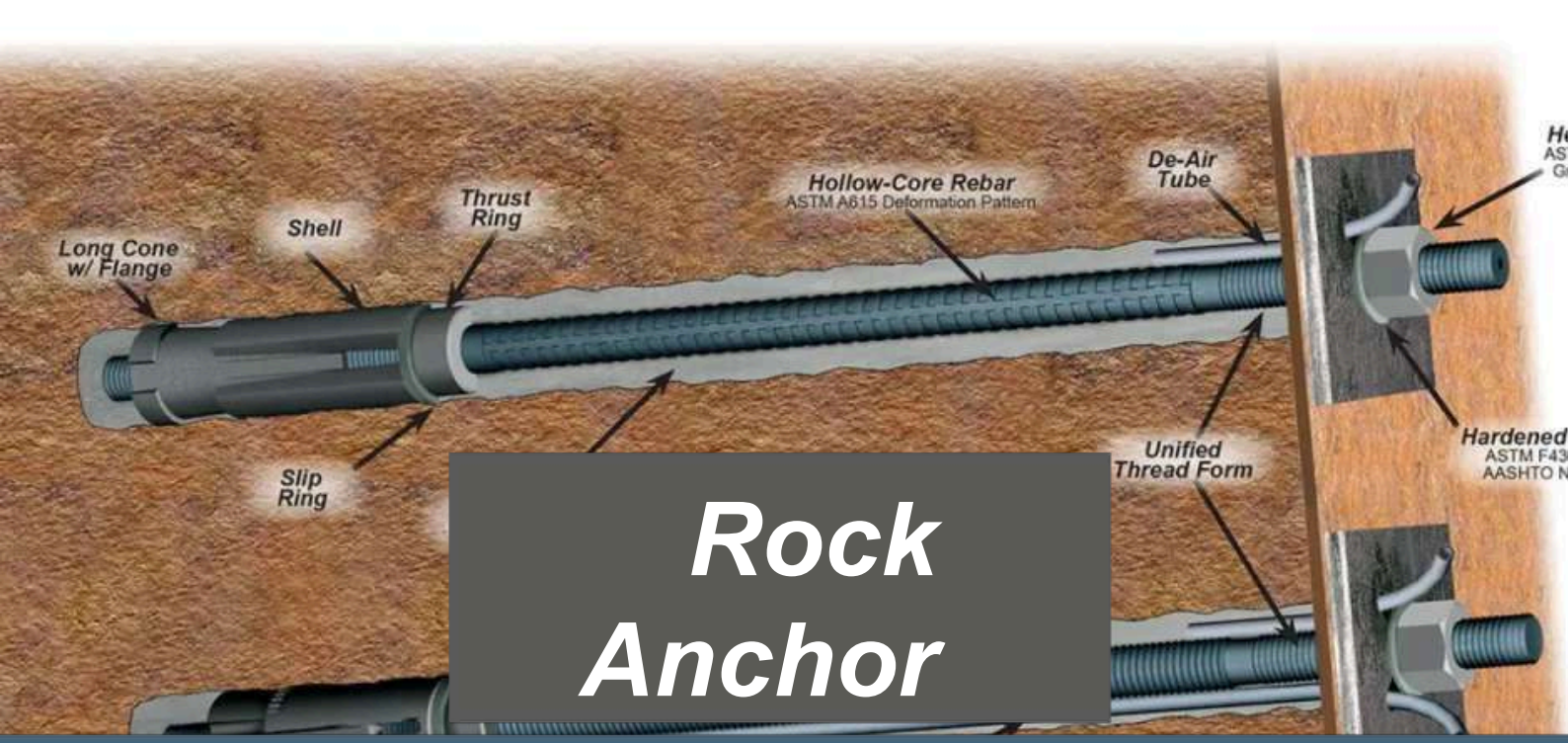
» Cost advantage

- ✓ Lower material costs than for conventional concrete structures
- ✓ Low installation costs
- ✓ No costs for special tools
- ✓ On-site material for filling can be used
- ✓ Low transport costs
- ✓ Longevity reduces overall costs



Anchor Bolt

More information and our brochure Rock Bolt are available at...



Rock Anchor

More information and our brochure Rock Bolt are available at...

Research & Development

» Safety defined by innovation

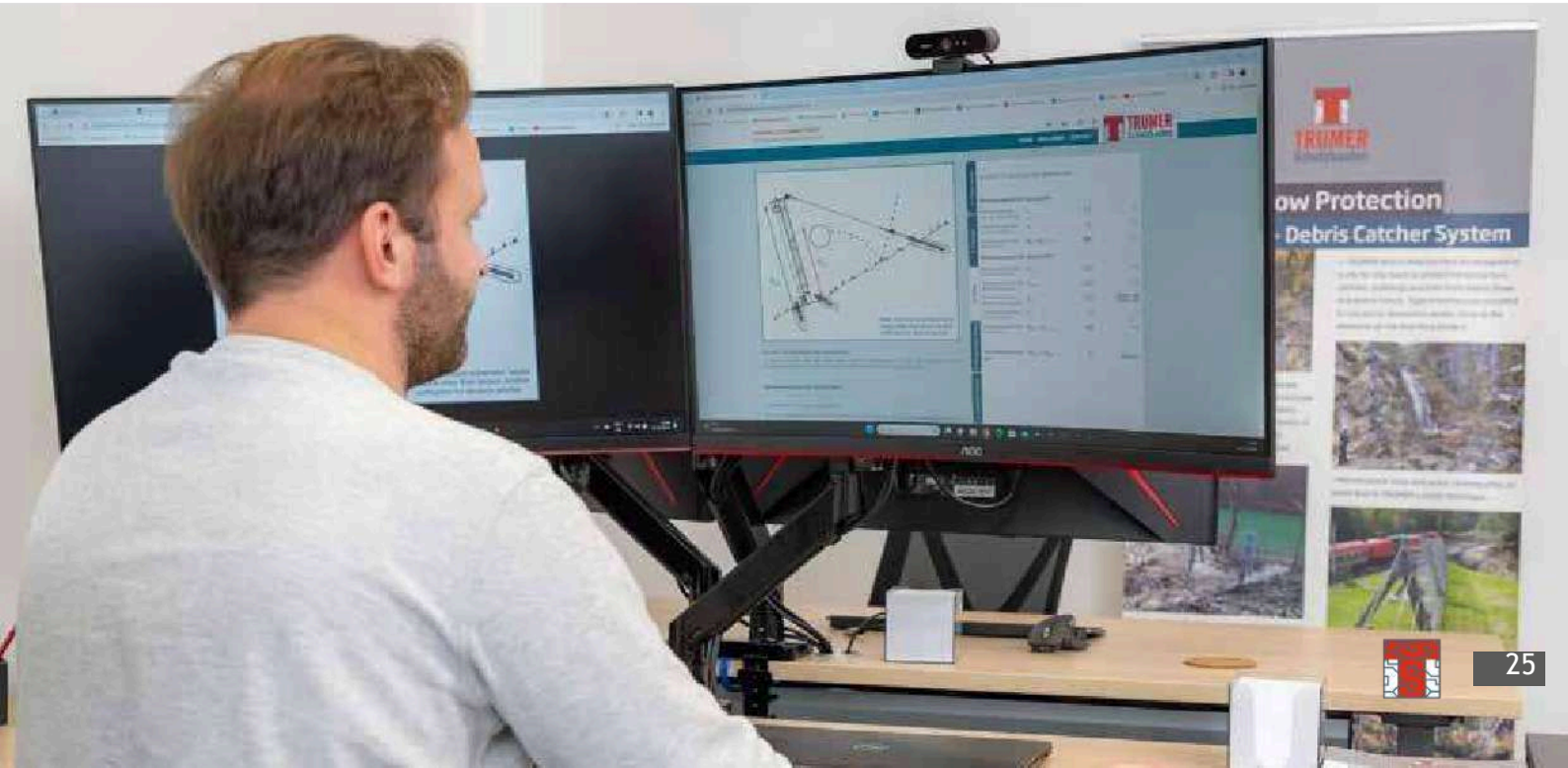
Maximum safety can onlybe achievedby testing in the right test environment andby repeatedlytesting under extreme conditions. This isthe exclusive way to develop protection systems with uncompro- mising safety.

TRUMER has several research and development facilities with modern equipment by which products are tested and certified according to the latest state-of-the-art practices.

New products are developed and proven products optimized in collaboration with leading scientists, engineers and with the involvement of end customers and construction companies.

Inour development work,weuse the latest equipment, instrumentation andmeasuring procedures inorder toalways be on thecutting edge of science andtechnology or to redefine it. For the development, testingand certification of our rockfall protection systems, TRUMER uses the world's most modern inclined test facility at the Styrian Erzberg in Austria.

With the additional use of a vertical test facility in Trentino, Italy, special situations can also be investigated in 1:1 field tests and new knowledge can be generated.Through multiple tests, TRUMER provides maximum protection for various impact scenarios.



Support & Services

TRUMER provides expert advice and support for protection against natural hazards across all project phases, from planning and design to installation, as well as the maintenance and servicing of protective structures.

The process is carried out in accordance with the Austrian ONR 24810 standard. TRUMER also supports project development in slope and embankment protection through the use of its in-house calculation programs.

Withits many years of experience, TRUMER offers in- dividual special solutions in a wide variety of areas and advises planners and customers on the development of special solutions and their implementation.

With our calculation tools *theslopestayshere.com* and *therockstopshere.com*, we support engineers, planners

TRUMER offers its customers a comprehensive ser-

certificates

ZERTIFIKAT ◆ CERTIFICATE ◆ 認証書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

TÜV SÜD
Landesgesellschaft Österreich

CERTIFICATE

The Certification Body
of TÜV SÜD Landesgesellschaft Österreich GmbH

certifies that

TRUMER Schutzbauten GmbH

TRUMER Schutzbauten GmbH

5110 Oberndorf, Maria-Bühel Straße 7
5431 Kuchl, Weißenbach 106
5162 Obertrum am See, Handelsstraße 6
D-90762 Fürth, Königswarterstraße 70
5162 Obertrum am See, Gruberfeldstraße 4

has established and applies
a Management System for

sales and production of rockfall- and avalanche protection as well as rock and slope stabilisation

An audit was performed and proof has been furnished that the requirements according to

ISO 9001 : 2015

are fulfilled. The certificate is valid from 2022-10-01 until **2025-09-30**

Certificate Registration No. **Q1530914**

Akkreditierung Austria A 0917 ISO/IEC 17021-1

Vienna, 2022-08-21

Certification Body
of TÜV SÜD Landesgesellschaft Österreich GmbH
Franz-Grill-Straße 1 · Arsenal, Objekt 207, 1030 Vienna, Austria

TÜV®

Technický a skúšobný ústav stavebný, n. o.
Building Testing and Research Institute
Studená 3
821 04 Bratislava
Slovak Republic
Phone: +421 2 49228101
E-mail: sternova@tsus.sk
Website: www.tsus.sk

Designated according to Article 29 of Regulation (EU) No 305/2011

Member of EOTA
www.eota.eu

European Technical Assessment ETA 19/0314 – version 02 of 30/04/2024

General Part

Technical Assessment Body issuing the ETA and designated according to Article 29 of the Regulation (EU) No 305/2011:	**Technický a skúšobný ústav stavebný, n. o.**
Trade name of the construction product	Slope Stabilization System "Sigma 50/3.2"
Product family to which the construction product belongs	Product area code: 23 Road Construction Products
Manufacturer	Trumer Schutzbauten GmbH Maria Buehel-Strasse 7 5110 Oberndorf Austria http://www.trumer.cc
Manufacturing plant	Trumer Schutzbauten GmbH Handelsstrasse 6 5162 Obertrum am See Austria
This European Technical Assessment contains	9 pages including 4 annexes which form an integral part of this assessment.
This European Technical Assessment is issued in accordance with regulation (EU) No 305/2011, on the basis of	EAD 230025-00-0106
This version replaces	ETA 19/0314 – version 01, issued on 01/07/2020

Notifikovaná osoba č. 1301

TECHNICKÝ A SKÚŠOBNÝ ÚSTAV STAVEBNÝ, n. o.
BUILDING TESTING AND RESEARCH INSTITUTE
Studená 3, 821 04 Bratislava, Slovenská republika

Certificate of constancy of performance

1301 – CPR – 1563

In compliance with Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011 (the Construction Products Regulation or CPR), this certificate applies to the construction product

Slope Stabilization System "Sigma 50/3.2"

is intended to be used for:
- stabilization of steep slopes of unconsolidated soil and rocky material and for prevention of stones and blocks in disintegrated, loose or weathered rock faces from breaking out (Slope Stabilization System);
- securing of rock slopes, spurs, overhangs or individual section of loose rock (Rock Protection System);
- protection system for safety application like not sudden impact of objects.

Placed on the market under the name of

Trumer Schutzbauten GmbH
Maria Buehel-Strasse 7, 5110 Oberndorf
Austria

and produced in the manufacturing plant

Trumer Schutzbauten GmbH
Handelsstrasse 6, 5162 Obertrum am See
Austria

This certificate attests that all provisions concerning the assessment and verification of constancy of performance described in the

ETA 19/0314 – version 02, issued on 30/04/2024

and

EAD 230025-00-0106

under system 1 for the performance set out in the ETA are applied and that the factory production control conducted by the manufacturer is assessed to ensure the

constancy of performance of the construction product.

This certificate was first issued on 7 September 2020 and will remain valid as long as neither the ETA, the EAD, the construction product, the AVCP methods nor the manufacturing conditions in the plant are modified significantly, unless suspended or withdrawn by the notified product certification body.

Bratislava, 13 June 2024

Technický a skúšobný ústav stavebný, n. o. TSUS - 1 - Notifikovaná osoba 1301

Dipl. Ing. Daša Kozáková
Head of Notified Body 1301

166660

Approvals

Client:	Consultant:	Contractor:
Qiddiya	ATKINS Member of the SNC-Lavalin Group	شركة هيف Haif Company

TECHNICAL DOCUMENTS

Project Name: HAIF – SixFlags	ProjectCode: QC02001
Location:	Date: 27-March-20 25
Document Title: : MaterialApproval Request for SigmaNetting Systems.	Ref No: QC02001-HAI-TEC-MAT- CIV-00-Z00-00004
	Rev No: 00

Department: Architectural Structural Electrical Mechanical Authority ☒ Others

Type: Pre-Qualification Method Statement × Material Submittal Sample ☒ Other

Document Description: This is Material Approval Request for Sigma Netting Systems.

Doc. Ref. No.	Title
QC02001-HAI-TEC-MAT- CIV-00-Z00-00004	Material Approval Request for Sigma Netting Systems.

Enclosure:

Submitted By:	Received By:
Name: Mohmd. Falah Signature: Date: 27-March-20 25	Name: Signature: Date:

Status: A- Approved — Below portion for Consultant Supervision use only

B- Approved as noted C- Revise & Resubmit R- For information only

Comments:

Below portion for Client use only

Comments:

Signed by: Signature: Date:

02 Gulf of Aqaba
NEOM City
NEOM
Saudi Arabia

NEOM - Engineering & Technical Services Dept
ITCC Complex, Al Raidah Digital City
Level 2, Building IN01
Riyadh
An Nakheel 12382 Saudi Arabia

MAIL TYPE	MAIL NUMBER	REFERENCE NUMBER
Workflow Transmittal	NEN-WTRAN-007432	NEN-WTRAN-007432

Final (WF-021333) 02-4800000805/000-IN-ETSD RQM - PQD - IFR

From	Mr Ramy Belal - NEOM - Engineering & Technical Services Dept
To (4)	Neom Pmc Region 02 - AECOM (+3 more...)
Cc (21)	Mr Nauman Fiaz - AECOM (+20 more...)
Sent	Monday, 2 October 2023 1:05:22 PM AST (GMT +03:00)
Status	N/A

DOCUMENT ATTACHMENTS (2)

(**0** selected)

File	Document No	Revision	Revision Date	Title	Status
	02-213100-4800000805-AAC-CIV-CRS-000028	01	26/09/2023	4800000805/000 - The Cube Mountain Top Excavation Works Prequalification Approval For TRUMER (Supply of Rock Fall Mesh and Rock Fall Barriers)	B - Incorporate Comments - Proceed
	02-213100-4800000805-AAC-CIV-PQD-000010	01	26/09/2023	4800000805/000 - The Cube Mountain Top Excavation Works Prequalification Approval For TRUMER (Supply of Rock Fall Mesh and Rock Fall Barriers)	B - Incorporate Comments - Proceed

MESSAGE

Workflow Review History

The attached documents have completed the "02-4800000805/000-IN-ETSD RQM - PQD - IFR" workflow with the following results :

This transmittal was automatically generated

Doc No	Step	Participant	Review Outcome	Comments

QDC - Uptown Stadium Precinct
3rd Floor Building IN-01 ITCC Complex,
AlRaidah Digital City,
Al Nakhil District
Qiddiya
Riyadh 12382 Saudi Arabia

dar
Dar Al-Handasah Consultants
(Shair and Partenrs)

MAIL TYPE	MAIL NUMBER	REFERENCE NUMBER
Workflow Transmittal	DAH-WTRAN-001300	DAH-WTRAN-001300

Final (WF-000982) UTS-NES-TEC-MTS-CIV-00-Z00-00001-R02:Material Submittal of Rockfall Protection System-Sigma

From	Mr Ibrahim Chehab - Dar Al-Handasah (Shair and Partners) - Saudi Arabia
To (5)	Mr jamsheer thattarathil - Dar Al-Handasah (Shair and Partners) - Saudi Arabia (+4 more...)
Cc (15)	Mr Yasir Hamzeh Gharaibeh - Nesma & Partners (+14 more...)
Sent	Wednesday, 16 October 2024 10:16:50 AM AST (GMT +03:00)
Status	N/A

DOCUMENT ATTACHMENTS (1)

(0 selected)

File	Document No	Revision	Revision Date	Title	Status
	UTS-NES-TEC-MTS-CIV-00-Z00-00001	02	12/10/2024	Stadium (LP2)- Rockfall Protection System from Sigma Wire Mech50/3.2, Clips, Plats, Flexible head, and all Accessories	B - Approved with Comments

MESSAGE

Workflow Review History

The attached documents have completed the "UTS-NES-TEC-MTS-CIV-00-Z00-00001-R02:Material Submittal of Rockfall Protection System-Sigma" workflow with the following results :

This transmittal was automatically generated.

Doc No	Step	Participant	Review Outcome	Comments
UTS-NES-TEC-MTS-CIV-00-Z00-00001	CSC DC QA Check	j thattarathil	A - Approved	CSC DC QA Check - Document submission is

TRUMER SCHUTZBAUTEN REFERENCES SIGMA since 2019*

Main clients reprsented by: Railways, Road Authorities, Power Plants, Communities and various contractors

Main active countries: Austria (AT), Germany (DE), Switzerland (CH), Norway (NO), Slovenia (SL), India (IN), Nepal (NP), Philippines (PH)

Other countries since 2010: Oman (OM), United Arab Emirates (AE), Honk Kong (HK), Taiwan (TW), Malaysia (MY), China (CN), Peru (PE), Chile (CL), Canada (CA), Russia (RU), Bulgaria (BG), Georgia (GE), Andorra (AN), Czech Republic (CZ), Iceland (IS), Spain (ES), Italy (IT)

*as of September 2023

Rockfall barriers

Debris Flow Barriers

Rockfall Netting

Snow Avlanache Net

Year	Country	Project	Product	Product Group	Status
2023	DE	Sachtleben	TS-Sigma	Rockfall Netting	delivered and installed
2023	AT	FST Salzburg	TS-Sigma	Rockfall Netting	delivered and installed
2023	DE	Salmen	TS-Sigma	Rockfall Netting	delivered and installed
2023	AT	PGH Geoservice	TS-Sigma	Rockfall Netting	delivered and installed
2023	AT	FST Lienz	TS-Sigma	Rockfall Netting	delivered and installed
2023	SG	Geoquest	TS-Sigma	Rockfall Netting	delivered and installed
2023	AT	Swietelsky Linz	TS-Sigma	Rockfall Netting	delivered and installed
2023	AT	Amt d. Niederösterr. Landesreg.	TS-Sigma	Rockfall Netting	delivered and installed
2023	AT	Porr Feldbach	TS-Sigma	Rockfall Netting	delivered and installed
2023	AT	Swietelsky Linz	TS-Sigma	Rockfall Netting	delivered and installed
2023	AT	Swietelsky Linz	TS-Sigma	Rockfall Netting	delivered and installed
2023	AT	Stenitzer Bohr- und Sprengetchnik	TS-Sigma	Rockfall Netting	delivered and installed
2023	AT	Stenitzer Bohr- und Sprengetchnik	TS-Sigma	Rockfall Netting	delivered and installed
2023	SA	Limak Al-Ayuni Joint Venture	TS-Sigma	Rockfall Netting	delivered and installed
2023	AT	Kaim Villach	TS-Sigma	Rockfall Netting	delivered and installed
2023	AT	Kaim Villach	TS-Sigma	Rockfall Netting	delivered and installed
2023	AT	Kaim Villach	TS-Sigma	Rockfall Netting	delivered and installed
2023	DE	Schönberger Bau	TS-Sigma	Rockfall Netting	delivered and installed
2023	SI	EHO Projekt d.o.o.	TS-Sigma	Rockfall Netting	delivered and installed
2023	AT	WLV Reutte	TS-Sigma	Rockfall Netting	delivered and installed
2023	DE	Bernegger GmbH	TS-Sigma	Rockfall Netting	delivered and installed
2023	AT	Straßenmeisterei Schwarzach	TS-Sigma	Rockfall Netting	delivered and installed
2023	AU	Reinforced Earth Australia	TS-Sigma	Rockfall Netting	delivered and installed
2023	AT	WLV Wörgl	TS-Sigma	Rockfall Netting	delivered and installed
2023	AT	L704 Sölkpassstraße	TS-Sigma	Rockfall Netting	delivered and installed
2023	AT	B66 Rutschung Feldbach	TS-Sigma	Rockfall Netting	delivered and installed
2023	DE	B85 Regen	TS-Sigma	Rockfall Netting	delivered and installed
2023	SI	Vipava Nanos Road - Lot 1A2F	TS-Sigma	Rockfall Netting	delivered and installed
2023	AT	Gföllberg	TS-Sigma	Rockfall Netting	delivered and installed

Material Matrix

Service Life of Steel Wire Coatings

The durability of corrosion-protected steel components such as wires can be estimated via the corrosion rates (reduction rates) of the zinc coating. The specific corrosion rates are given by EN ISO 14713-1 for the first year and by EN ISO 9224 in the longer term for 10 years in average.

Fig. 01 shows the service life according EN ISO 9224 as a function of the corrosivity categories C1 – C5, which are described within EN 12944-2.

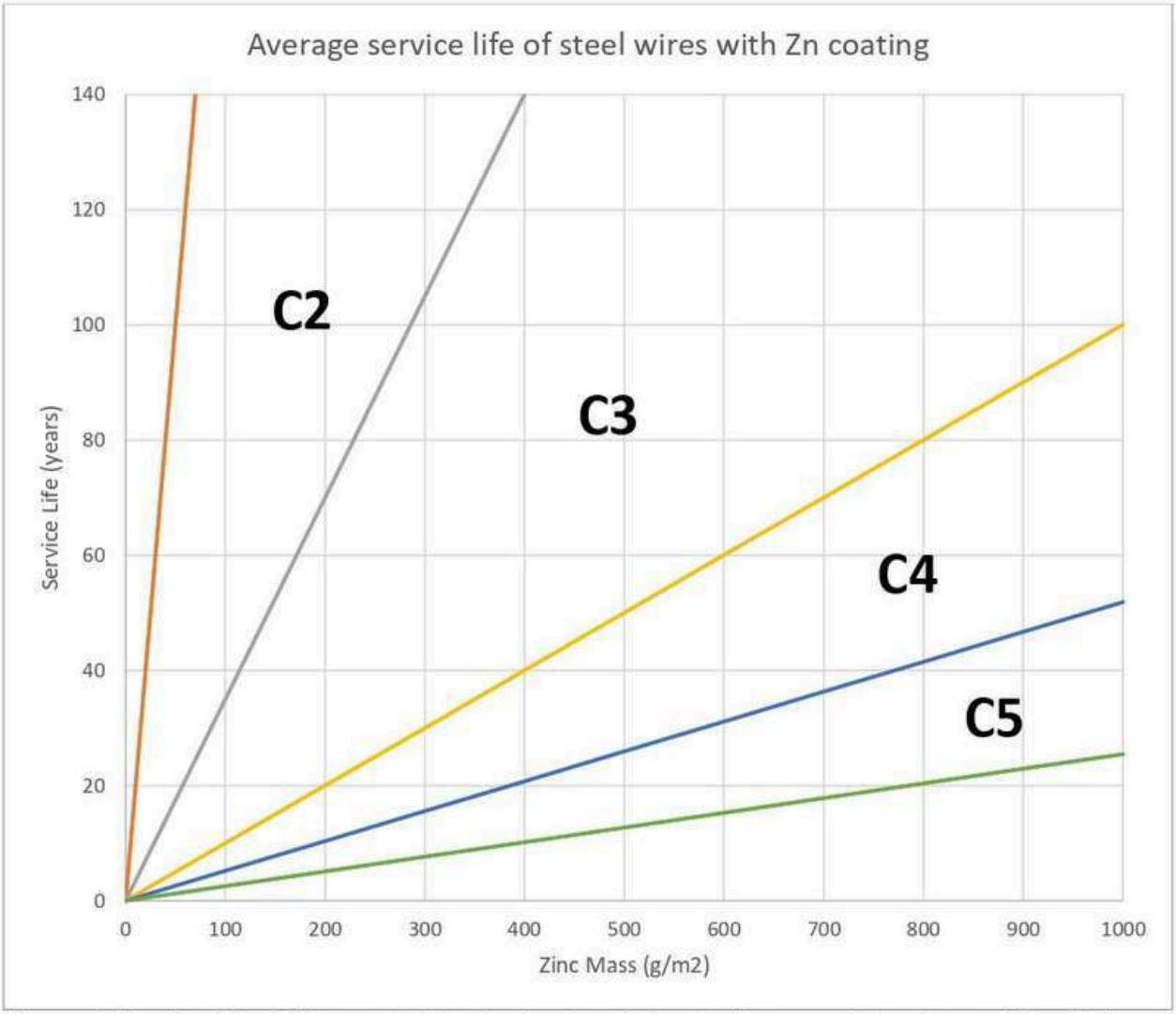


Figure 1: Service life of Zinc coated steel wires in relation to the corrosivity classes C1 – C5 based on ISO

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