Abstract of test report no. 0202

System TS-750
Test V0202 / Eisenerz / 07.06.2002

General information

Energy class:	750kJ
Manufacturer:	Trumer Schutzbauten GmbH Maria-Bühel Straße 7 5110 Oberndorf bei Salzburg Austria
Product name:	TS-750
Test report number:	0202
Test report creation date:	23.08.2002

Specification of rock-fall protection kit TS-750

The tested rock-fall protection kit TS-750 of TRUMER SCHUTZBAUTEN GMBH is a flexible rock-fall protection system for energy impacts up to 750kJ.
The rock-fall protection kit TS-750 is characterised by a support structure which is connected to the underground by ground plates. The ground plates are supported by floating bearings. The structure is held in position by uphill retaining cables at the top of the posts and at the ground plates.
The interception structure of the tested rock-fall protection kit consists of an OMEGA-Net. The system was tested without an additional layer.
The upper and lower longitudinal bearing rope are, just like the retaining cables, part of the connection components. They are arranged as single ropes and connected to the side foundations using energy dissipating devices.

Main components of rock-fall protection kit TS-750

INTERCEPTION STRUCTURE

PRIMARY NET	Type	OMEGA-Net
	Rope diameter	7.5mm
	Mesh-size	140.0mm
	Dimensions	5.00m x 4.00m
	Connection to bearing ropes	threaded and by shackles
	Connection to side posts	steel cable (Ø 7.5mm)
	Net to net connection	3/8' shackles
ADDITIONAL LAYER	none	

SUPPORT STRUCTURE

POST	Type	HEA-140 (IPBI-140)
	Material	S 235 JR
	Length	4.15m
GROUND PLATE	Dimensions	n.s.
	Material	S 235 JR
	Connection to post	hinged joint
	Connection to underground	floating bearing
GUIDANCE OF ROPES	Bearing ropes	rounded guiding devices

CONNECTING COMPONENTS

UPPER AND LOWER LONGITUDINAL BEARING ROPES (cp. DIN 3058, ISO 2408 and EN 12385-4)
Rope 24 / 6x19 Seale / DIN 3058 / steel core / galvanised / 1770N/mm²

Nominal rope diameter	24mm
Calculated breaking load	392kN

UPHILL RETAINING CABLES AND SIDE CABLES (cp. DIN 3060, ISO 2408 and EN 12385-4)
Rope 18 / 6x19 Standard / DIN 3060 / steel core / galvanised / 1770N/mm²

Nominal rope diameter	18mm
Calculated breaking load	238kN

ENERGY DISSIPATING DEVICES

ENERGY DISSIPATING DEVICES IN THE UPPER LONGITUDINAL BEARING ROPE

Type	TS-100kJ	Position	left and right rope foundation
		Space for reaction	0.75m
		Connection to rope	3/4' shackle
		Connection to anchor	3/4' shackle

ENERGY DISSIPATING DEVICES IN THE LOWER LONGITUDINAL BEARING ROPE

Type	TS-100kJ	Position	left and right rope foundation
		Space for reaction	1.00m
		Connection to rope	3/4' shackle
		Connection to anchor	3/4' shackle

Summary of test results

The tested rock-fall protection kit TS-750 of TRUMER SCHUTZBAUTEN GMBH was hit by a block of reinforced concrete with a mass of 2228kg and a velocity of 26.37m/s. The impact was placed in a height of 1.60m. The angle of block trajectory was determined with 24.40°. The impact energy was determined with 774kJ. The maximum horizontal system elongation was 5.76m.
The block was stopped and caught by the rock-fall protection kit and did not touch the ground during the test until the system reached the maximum elongation. The whole impact energy was absorbed by the tested rock-fall protection kit.
There were no visible damages in connecting components. In the place of impact the primary net was deformed irreversibly. There were no damages in the support structure, but the joint bolts of the posts (rated break points) on the left side of the rock-fall protection kit were plastically deformed.
The energy dissipating devices in the longitudinal bearing ropes were stretched till their deformation capacities were exhausted.
The remaining working height after the test was not determined.

THE ROCK-FALL PROTECTION KIT **TS-750** OF TRUMER SCHUTZBAUTEN GMBH WAS TESTED SUCCESSFULLY.

Affirmation of test report no. 0202 by the University of Leoben

The department of Mining & Tunnelling of the University of Leoben approves that test report no. 0202 created by Christian Heiss is correct in respect of content and matter of fact.

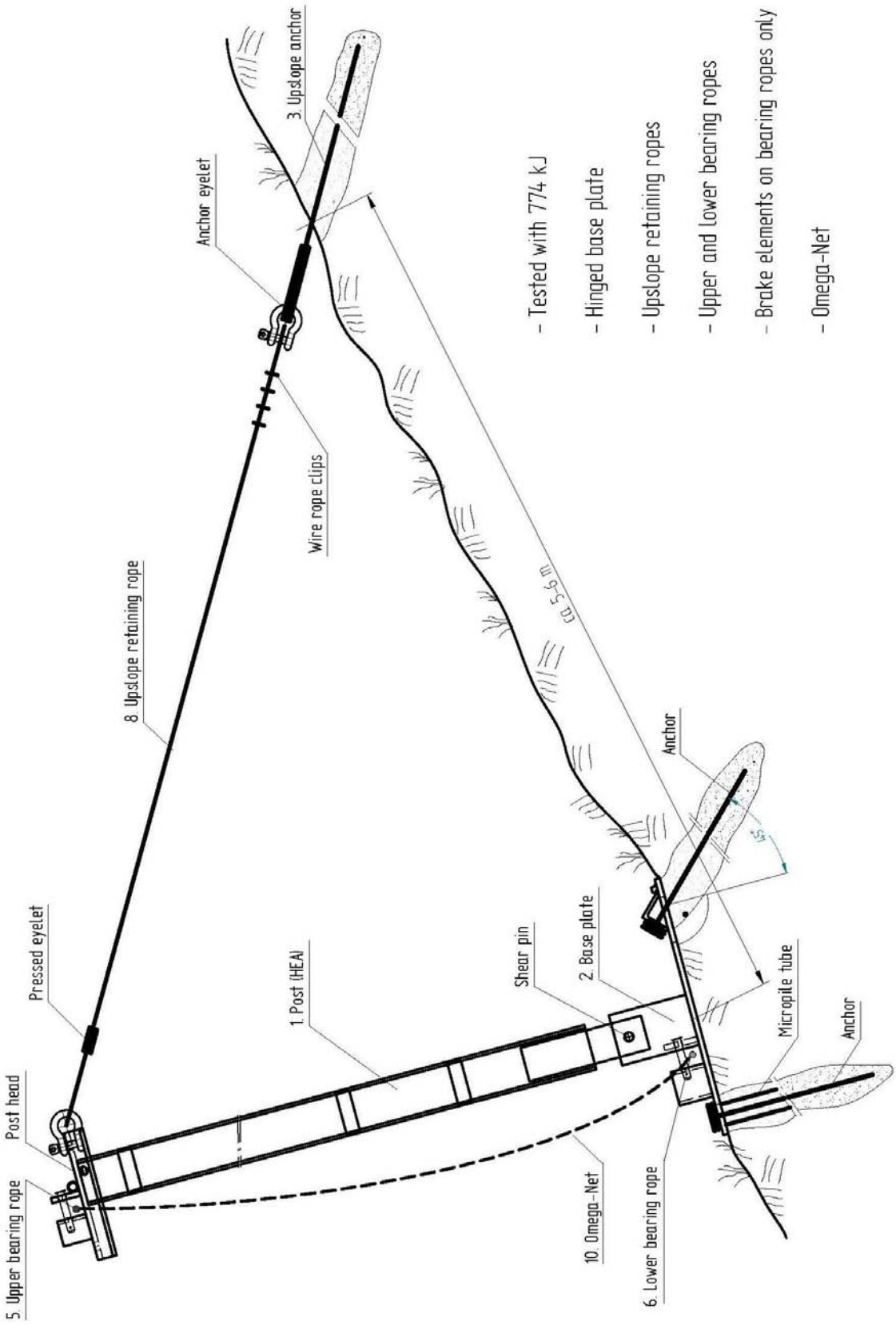
Leoben, 25.07.2005

MONTANUNIVERSITÄT LEOBEN

(a.o. Uni.Prof.Dipl.-Ing.Dr.mont. Peter Moser)

(Dipl.-Ing. Hannes Blaha)

Rockfall Protection System TS-750 · Lateral View



Rockfall Protection System TS-750 · Plan View