

Rockfall Protection Net / Product – Data Sheet

System name	ISOSTOP – 2000 Ev
Address of manufacturer	Pfeifer Isofer AG, Hasentalstrasse 8, 8934 Knonau

Reference documents (Sources 1, 2 and 3)

BAFU (2018): Grundlagen zur Qualitätsbeurteilung von Steinschlagschutznetzen und deren Fundation - Anleitung für die Praxis

(1) Quality assessment by: Report no.: 17-3 Date: 15.10.2017

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Zürcherstrasse 111, 8903 Birmensdorf

(2) EOTA technical report (ETA): Report no.: 13/1046 Date: 21.1.2014

Angle of block trajectory during European evaluation	90 Degree	Gradient Reference level	70 Degree
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(3) Documentation Pfeifer Isofer AG:

	No.	Date
Technisches Produkthandbuch	Rev. 2	07/2017
Berechnung der Ankerkräfte	Rev. 2	17.10.2017
Montagehandbuch	V3.5	12/2013
Wartungshandbuch	Revision 1	10/2013

System description (Sources 2 and 3)

Specifications:			Source
Energy absorption (MEL)	2000 kJ	Level 5	(2)
Nominal height (MEL)	3.96 m		(2)
Residual height (MEL)	2.09m	Class A	(2)
Posts	Profile	HEA 160	(3)
	Steel quality	S355	(3)
	Length	4.1 – 6.1 m	(3)
	Spacing for test	10 m	(3)
Rope:	Standard	EN-12385-4	(3)
	Diameter	20 mm	(3)
Net:	Type/name	Diagonal net	(3)
	Standard	EN-12385-4	(3)
	Rope diameter	12 mm	(3)
	Mesh size	250 mm / 250 mm	(3)
Weight of heaviest inseparable component	190 kg (Post 6.1 m)		(3)

Deceleration processes (SEL1, SEL2 und MEL) *(Source 1 and 2)*

Test	m (kg)	d (m)	v (m/s)	w (m)	t (s)	Ek (kJ)	Ew (kJ)	En (kJ)
SEL 1	2260	1.06	25.1	4.70	0.300	712	104	816
SEL 2	2260	1.06	25.1	2.20	0.152	712	49	761
MEL	4800	1.34	28.9	7.70	0.404	2005	363	2367

Maximum forces in the ropes (SEL1, SEL2 und MEL) *(Source 1 and 3)*

Rope (s)	To+Sa	SaTu	Rhs 2	Rhs 3	Rhs 4	Rhs 4	Rhs 4
Number of Ropes	3	2	2	1	1	1	1
Cells no.	Z5	Z10	-	-	-	Z2	Z8
SEL 1 (kN)	213	154				58	76
SEL 2 (kN)	267	174				125	133
Cells no.	Z12	Z10	Z1	Z3	Z2	-	Z8
MEL (kN)	353	328	46	222	130		223

Anchor forces (MEL) *(Source 1 and 3)*

Anchors	To+Sa	Tu	Rhs	Rhs_p	Rhs_o
Number of Ropes	3	2	2	2	2
Cells no.	Z12	Z10	Z1+Z3	Z1+Z3	Z1+Z3
Maximum force (kN)	353	328	238	215	104
Factor	1.3	1.3	1.3	1.3	1.3
Substitute load (kN)	459	426	309	280	135

Points for assessment criteria

(Source 1)

Criteria	maximum possible	minimum recommended	attained
A1: Priority criteria	16	16	16
A2: Assessment of the nets	10	8	10
A3.1: Technical documentation	15	12	15
A3.2: Assembly instructions (net without stop ropes)	38	30	37
A3.3: Maintenance manual	19	15	17
Total (net without stop ropes)	98	81	95

Birmensdorf, 20 October 2017

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Designations for rockfall protection nets

	Unit	Designation
d	[m]	Edge length of test body
m	[kg]	Weight of test body
v	[m/s]	Speed of test body at first net contact
w	[m]	Braking distance of test body in the net
t	[s]	Braking time of test body in the net
Ek	[kJ]	Kinetic energy of test body at first net contact
Ew	[kJ]	Potential energy of test body due to braking distance
En	[kJ]	Total energy relative to lowest position of test body
To, Tu	[kN]	Maximum force in upper or lower support rope
Fso, Fsu	[kN]	Maximum force in upper or lower stop rope
Sa	[kN]	Maximum forces in lateral anchorage
Rhs	[kN]	Maximum forces in retaining ropes
Rhs_o	[kN]	Maximum sum of forces (Rhs) parallel to the installation line
Rhs_p	[kN]	Maximum sum of forces (Rhs) perpendicular to the installation line
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SEL 1	Service Energy Level 1st Test	
SEL 2	Service Energy Level 2nd Test	
MEL	Maximum Energy Level	

Diagram showing designations for braking processes

View in direction of installation (vertical system)

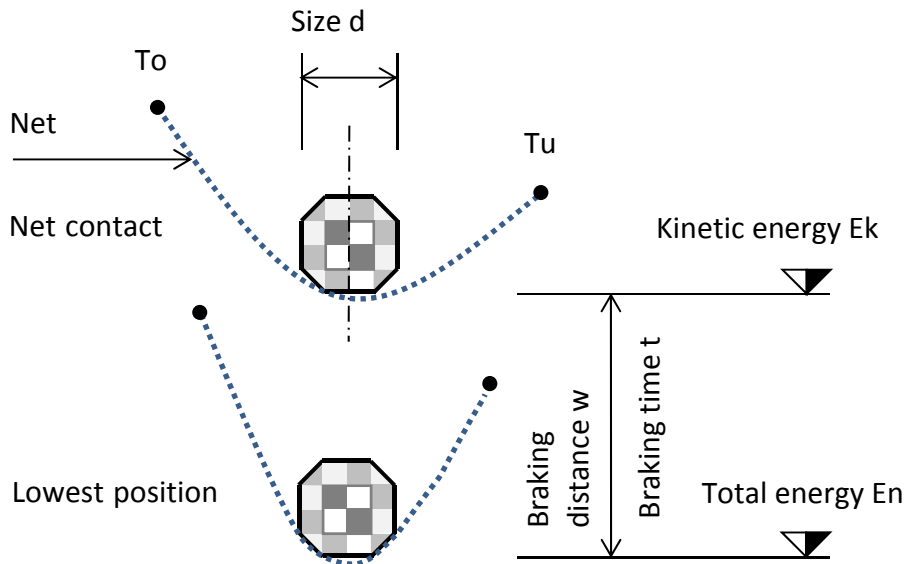
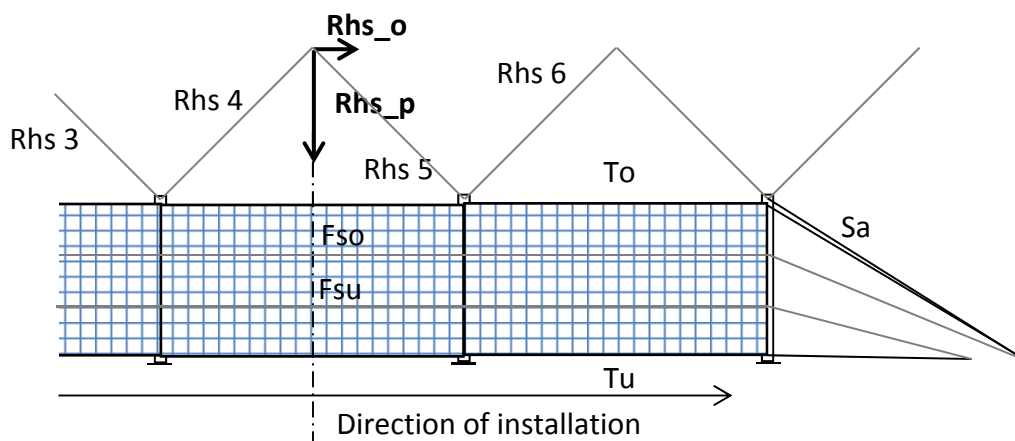


Diagram showing designations for anchor forces



The rockfall barrier ISOSTOP – 2000 Ev does not contain stop ropes (F_{so} and F_{su})