(N)TSCGECWÖU - TBM

CABLE STRUCTURE

Conductors	Flexible Tinned Electrolytic Copper Conductor DIN VDE 0295 Class 5
Insulation	3GI3 type EPR Compound
Electrical Field Control	Inner and Outer Semiconductive layer of semiconductive rubber
Control Core	Tinned Copper Conductor with semiconductive layer.
Protective - Earth Conductor	Tinner Copper / Textile braiding combinated cores laying concentric around each power core.
Core Identification	Main Cores: Natural coloring with black semiconductive rubber, Control cores: Black
Lay Up	Three main conductors laid-up with three control cores in the outer interstice
Inner Sheath Monitoring	GM1b Type EPR Compound
Conductor	Overall concentric lay of copper wire spinning
Outer Sheath	5GM5 Type elastomer compound, Red

PRODUCTION AND TEST STANDARDS

Construction	Based on DIN VDE 0250-813
General Requirements	DIN VDE 0250-1
Guide to Use	DIN VDE 0298-3
Electrical Tests	DIN VDE 0472-501, 503, 508
Non-Electrical Tests	DIN VDE 0472-401, 402, 602, 303, 615
Under Fire Conditions Tests	DIN VDE 0472-803, 804
Flame Retardant	VDE 0482-332-1-2, DIN EN 60332-1-2, IEC 60332-1
Oil Resistant	HD/EN/IEC 60811-2-1, DIN VDE 0473-811-2-1

OPERATING CHARACTERISTICS

Rated Voltage	3,6/6 kV	6/10 kV	8,7/15 kV	12/20 kV	18/30 kV
AC Test Voltage	11 kV	17 kV	24 kV	29 kV	43 kV
Max. Permissible Operating Voltage AC	4,2/7,2 kV	6,9/12 kV	10,4/18 kV	13,9/24 kV	20,8/36 kV
Max. Permissible Operating Voltage DC	5,4/10,8 kV	9/18 kV	13,5/27 kV	18/36 kV	27/54 kV
Min. Bending Radius	Acc. to DIN VDE 0298 part 3				
Current Carrying Capacity	According to DIN VDE 0298, Part 4				
Working Temperature					
Fixed	-40°C ... +80°C				
Mobile	-25°C ... +80°C				
Max. Tensile Load of cable	15 N/mm²				
Max. Torsion	25°/m				
Travel Speed for TBM application	max. 30 m/min.				
Minimum distarce for change of direction	20 X D				

Ozone Resistant · Cold Resistant · Tear Resistant · Uv Resistant · Weather Resistant · Moisture Resistant · Ex-Proof

Application
The cables are suitable for reeling power supply cables for TBM's machines and in underground mines for tunnel constructions

3,6/6 kV

Cross Section (mm²)	Overall Diameter Min - Max (mm)	Approximate weight (kg / km)
3 x 25 + 3 x 16/3E + 3 x 2,5 ST + 6ÜL KON	42.2 - 45.4	2770
3 x 35 + 3 x 25/3E + 3 x 2,5 ST + 6ÜL KON	46.8 - 50.0	3200
3 x 50 + 3 x 25/3E + 3 x 2,5 ST + 6ÜL KON	50.1 - 53.2	4040
3 x 70 + 3 x 35/3E + 3 x 2,5 ST + 6ÜL KON	54.6 - 57.7	5035
3 x 95 + 3 x 50/3E + 3 x 2,5 ST + 6ÜL KON	56.4 - 60.5	6270
3 x 120 + 3 x 70/3E + 3 x 2,5 ST + 6ÜL KON	64.0 - 68.0	7400

6/10 kV

Cross Section (mm²)	Overall Diameter Min - Max (mm)	Approximate weight (kg / km)
3 x 25 + 3 x 16/3E + 3 x 2,5 ST + 6ÜL KON	45.5 - 48.2	2975
3 x 35 + 3 x 25/3E + 3 x 2,5 ST + 6ÜL KON	47.8 - 51.0	3420
3 x 50 + 3 x 25/3E + 3 x 2,5 ST + 6ÜL KON	50.7 - 54.9	4260
3 x 70 + 3 x 35/3E + 3 x 2,5 ST + 6ÜL KON	57.2 - 61.4	5270
3 x 95 + 3 x 50/3E + 3 x 2,5 ST + 6ÜL KON	61.1 - 65.3	6540
3 x 120 + 3 x 70/3E + 3 x 2,5 ST + 6ÜL KON	65.1 - 69.3	7840

12/20 kV

Cross Section (mm²)	Overall Diameter Min - Max (mm)	Approximate weight (kg / km)
3 x 25 + 3 x 16/3E + 3 x 2,5 ST + 6ÜL KON	51.1 - 55.3	3600
3 x 35 + 3 x 25/3E + 3 x 2,5 ST + 6ÜL KON	54.0 - 58.2	4140
3 x 50 + 3 x 25/3E + 3 x 2,5 ST + 6ÜL KON	59.4 - 63.6	5030
3 x 70 + 3 x 35/3E + 3 x 2,5 ST + 6ÜL KON	64.2 - 68.4	6200
3 x 95 + 3 x 50/3E + 3 x 2,5 ST + 6ÜL KON	69.2 - 73.8	7520
3 x 120 + 3 x 70/3E + 3 x 2,5 ST + 6ÜL KON	73.6 - 77.8	8740