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HS-070.22E

CARTRIDGE HEATERS hotrod® HHP

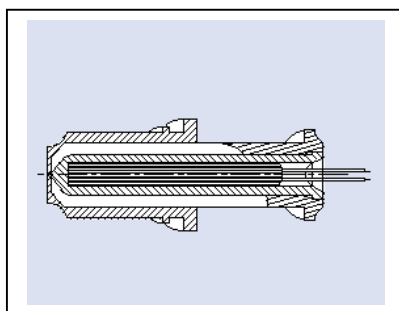


hotrod® cartridge heaters are the core products of the hotset production tradition. Outstanding know-how, high quality of materials used and the excellent production process all guarantee long durability and superb product characteristics.

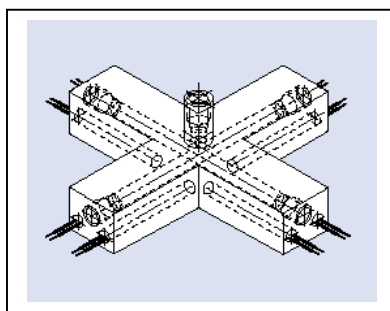
With an extensive stock range, hotset offers proven technology based on long-term experience, high production security and short delivery times. hotset guarantees an international quality standard with the VDE stamp for its hotrod® cartridge heaters.

By means of intensive cooperation with customers – even with special applications – hotset always manages to give its hotrod® cartridge heaters innovative impulses with new technical properties (e. g. moisture-protected connection area).

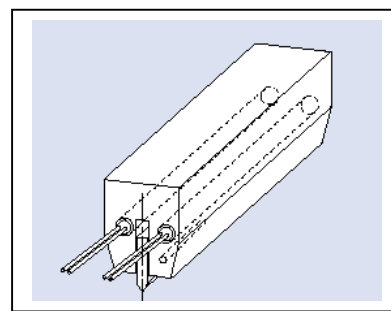
APPLICATION EXAMPLES



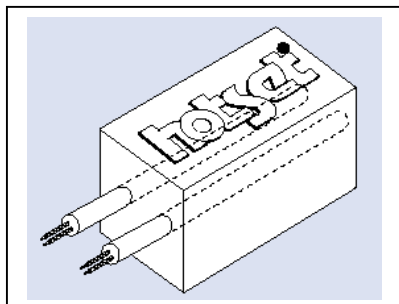
Injection moulding
Internal heating of nozzles



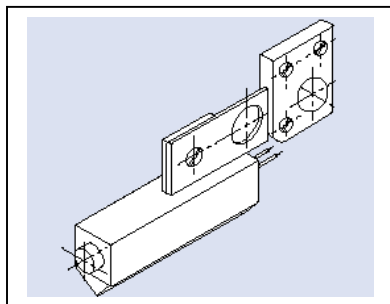
Hot runner systems
Heating of manifolds



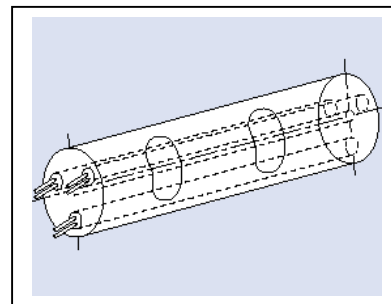
Packaging industry
Heating of welding bars



Packaging industry
Heating of hot stamps



Textile industry
Heating of cutting knives



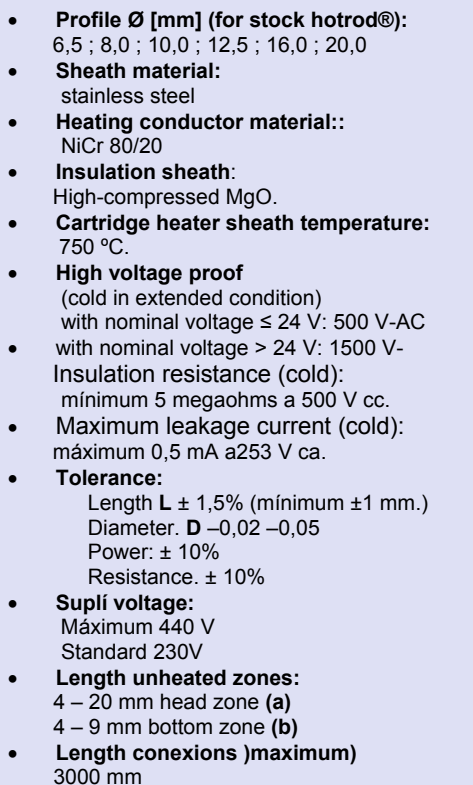
Paper industry
Heating of stamping rolls

Profile Ø [mm] (for stock hotrod®): 6.5; 8.0; 10.0; 12.5; 16.0; 20.0

Profile Ø [inch] (for stock hotrod®): 1/4; 3/8; 1/2; 5/8

Thermocouple: Fe-CuNi (type J/standard), Fe-CuNi (type L) up to 300 °C operating temperature or NiCr-Ni (type K) up to 750 °C operating temperature, potential-free,
Other dimensions and product variants upon request.

Conection type **AS 1** leads 1000 mm
T-HHP with thermocouple .Conection tvpe **T/AS 2** leads 1000 mm. .



	Diameter standard												
	Length in mm.												
	W a 230 V												
6,5 mm.	40,0	100	125	160	175	200					100	175	200
	50,0	100	125	160	200	250							200
	60,0	125	160	180	200	250	315					200	250
	80,0	125	160	180	200	250	280	315	350				
	100,0	100	160	200	220	250	315	350	400				350
	130,0	220	350										
	160,0	350	400										
8,0 mm.	40,0	100	140	160	200	250							
	50,0	125	160	200	250	315							250
	60,0	100	125	140	160	200	220	250	280	315	350		250
	80,0	160	200	250	280	315	350	400	500				315
	100,0	180	200	250	280	315	400						315
	130,0	250	315	400									400
	160,0	200											
10,0 mm.	40,0	100	125	160	200	250	315						200
	50,0	100	160	200	250	315	400						250
	60,0	125	160	180	200	250	315	400	500			250	400
	80,0	160	200	220	250	315	400	500	630			250	400
	100,0	125	220	250	315	350	400	500	560	630	700	850	350
	130,0	315	400	500	630	800							
	160,0	400	500	575	630	800					400	575	630
	200,0	400	630										
	250,0	630	800	1000									
12,5 mm	40,0	100	160	200	250	315	400						
	50,0	100	150	160	200	250	315	400	500				
	60,0	125	160	200	250	315	400	500				315	400
	80,0	150	200	250	315	400	500	630	800				
	100,0	250	315	400	500	630	800	1000					500
	130,0	400	500	630	800	1000	1250						
	160,0	500	630	800	1000	1250							800
	180,0	670	800	1000									
	200,0	630	800	900	1500								
	250,0	800	900										
	300,0	600	1500	2000									
16,0 mm.	40,0	100	160	200	250	315	400	500					
	50,0	160	200	250	315	400	500	630					
	60,0	160	200	250	315	400	500	630					
	80,0	280	315	400	500	630	800	850	1000				
	100,0	350	400	500	630	800	1000	1250					
	130,0	400	500	630	700	800	1000	110	1400	1800			
	160,0	630	800	900	1000	1250	1600	1800					
	180,0	850	1000	1250	1800								
	200,0	500	800	1000	1250	2000							
	250,0	1000	1250	1600									
	300,0	1000	1250	1500	1800								
20,0 mm.	50,0	200	250										

HHP STANDARD INCHES SIZES

Conection type **AS 1** leads 1000 mm

T-HHP with thermocouple .Conection tpoe **T/AS 2** leads 1000 mm. .



- **Profile Ø [mm] (for stock hotrod®):**(“)
1/4; 3/8; 1/2; 5/8; 3/4
 - **Sheath material:**
stainless steel
 - **Heating conductor material::**
NiCr 80/20
 - **Insulation sheath:**
High-compressed MgO.
 - **Cartridge heater sheath temperature:**
750 °C.
 - **High voltage proof**
(cold in extended condition)
with nominal voltage ≤ 24 V: 500 V-AC
with nominal voltage > 24 V: 1500 V-
Insulation resistance (cold):
minimum 5 megaohms a 500 V cc.
 - **Maximum leakage current (cold):**
máximum 0,5 mA a253 V ca.
 - **Tolerance:**
Length **L** ± 1,5% (minimum ±1 mm.)
Diameter. **D** -0,001” -0,025”
Power: ± 10%
Resistance. ± 10%
 - **Supli voltage:**
Máximum 440 V
Standard 230V
 - **Length unheated zones:**
4 – 20 mm head zone (**a**)
4 – 9 mm bottom zone (**b**)
 - **Length conexions)maximum)**
3000 mm
- Other dimensions and product variants upon request.

Diameter standard											
	Length in mm.										
	W a 230 V										
1/4” (6,3 mm.)	1 ½” (38,1 mm.)	100	125	160	175	200				100	175
	2” (50,8 mm.)	100	125	150	160	200	250			125	200
	2 ½” (63,5 mm.)	125	200	250	315						250
	3” (76,2 mm.)	200	250	300						200	300
	3 ¼” (82,5 mm.)	125	180	280	350						
3/8” (9,46 mm.)	4” (101,6 mm.)	160	220	250	350						350
	1 ½” (38,1 mm.)	100	125	175	200	250	315				200
	2” (50,8 mm.)	100	125	160	250	300	315	400	500		250
	2 ¼” (57,2 mm.)	300									
	2 ½” (63,5 mm.)	125	180	250	315	350	400	500		250	315
	3” (76,2 mm.)	100	150	250	300	400	500	600		250	400
	3 ¼” (82,5 mm.)	160	250	400	500	630					
	4” (101,6 mm.)	150	220	250	300	350	500	600	700	850	350
	5” (127,0 mm.)	300	500	750							
1/2” (12,61 mm.)	5 ¼” (133,3 mm.)	315	400	500	800						
	6” (152,4 mm.)	400	500	575	600	750				500	575
	6 ½” (165,1 mm.)	400	630								
	1 ½” (38,1 mm.)	100	125	160	200	250					
	2” (50,8 mm.)	100	200	250	300	315	400	500			
	2 ¼” (57,2 mm.)										300
	2 ½” (63,5 mm.)	125	150	200	250	300	315	400	500		300
	3” (76,2 mm.)	150	200	300	400	500	600	750			600
	3 ¼” (82,5 mm.)	200	315	500	630	800					
	4” (101,6 mm.)	250	400	500	630	750	800	1000			500
	5” (127,0 mm.)	250	400	500	750	900					
	5 ¼” (133,3 mm.)	400	630	1000	1250						
5/8” (15,81 mm.)	6” (152,4 mm.)	500	600	750	1000						750
	6 ½” (165,1 mm.)	500	800	1250							
	7” (177,8 mm.)	600									
	8” (203,2 mm.)	630	900	1000	1500	2000					
	10” (254,0 mm.)	1500									
	12” (304,8 mm.)	1500	2000								
	1 ½” (38,1 mm.)	100	250	315	400						
	2” (50,8 mm.)	160	250	300	400	500	630	750			
	2 ½” (63,5 mm.)	160	250	400	500	630					
	3” (76,2 mm.)	300	400	500	600	750	1000				
	3 ¼” (82,5 mm.)	280	400	630	800	1000					
	4” (101,6 mm.)	350	450	500	600	750	800	850	1000	1250	
	5” (127,0 mm.)	500	750	1000							
	5 ¼” (133,3 mm.)	500	700	1100	1400	1800					
	6” (152,4 mm.)	1000									
	6 ½” (165,1 mm.)	630	900	1600	1800						
	7” (177,8 mm.)	1000									
	8” (203,2 mm.)	500	800	1000	1250	1500	2000				
	10” (254,0 mm.)	1000	1500	1600	2000						
	12” (304,8 mm.)	1250	1800								

T-HHP HUMIDITY RESISTANT

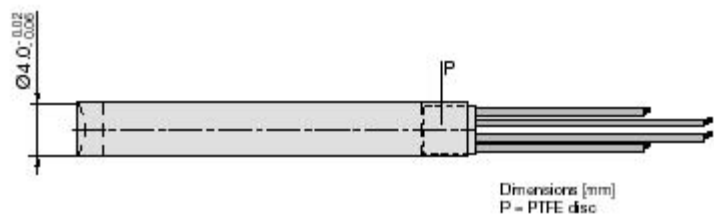
Conection **T/AS4** teflon insulated with teflón plug 1000 mm

Diameter	Length mm	W a 230V
8,0 mm	50,0	130
	65,0	170
	85,0	195
3/8” (9,52 mm)	68,0	175
	85,0	220
	112,0	285
	137,0	355

CARTRIDGE HEATERS hotrod® HHP Ø 4 mm

- **Profile Ø [mm]**
4 mm
- **Longitud máxima**
350 mm
- **Sheath material:**
stainless steel
- **Heating conductor material::**
NiCr 80/20
- **Insulation sheath:**
High-compressed MgO..
- **Cartridge heater sheath temperature:**
750 °C.
- **High voltage proof**
(cold in extended condition)
with nominal voltage ≤ 24 V: 500 V-AC
with nominal voltage > 24 V: 1500 V-AC
- **Insulation resistance (cold):**
mínimum 5 megaohms a 500 V cc.
- **Maximum leakage current (cold):**
máximum 0,5 mA a253 V ca.
- **Tolerance**
Length **L** $\pm 1,5\%$ (mínimum ± 1 mm.)
Diameter. **D** $-0,001'' -0,025''$
Power: $\pm 10\%$
Resistance. $\pm 10\%$
- **Supli voltage:**
Maximum 230V (maximum 1,6 A)
- **Maximum sheath surface load:**
20 W/cm²
- **Length unheated zones:**
13 mm head zone
6 mm bottom zone
- **Connection options:**
PTFE insulated Ni leads (multicore)
PTFE disc

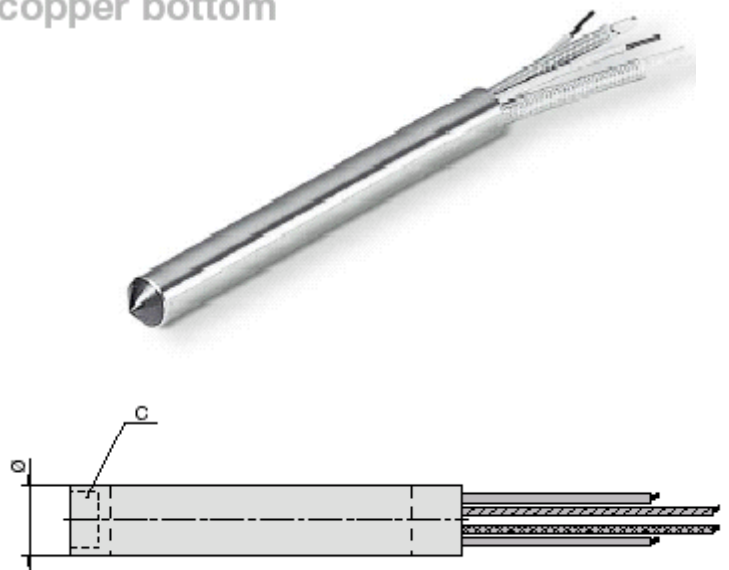
hotrod®
Ø 4.0 mm



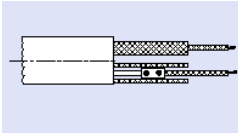
CARTRIDGE HEATERS hotrod® WITH HEAT CONDUCTIVE COPPER BOTTOM

- **Profile Ø [mm]:**
6,0; 6,3; 6,5; 8,0; 9,46; 10,0; 11,0; 12,0; 12,5;
12,61; 12,7; 15,81; 16,0; 19,0; 19,05; 20,0
- **Sheath material:**
stainless steel
- **Bottom**
copper flat, copper tip
- **Heating conductor material::**
NiCr 80/20
- **Insulation sheath:**
High-compressed MgO..
- **Cartridge heater sheath temperature:**
750 °C.
- **High voltage proof**
(cold in extended condition)
with nominal voltage ≤ 24 V: 500 V-AC
with nominal voltage > 24 V: 1500 V-AC
- **Insulation resistance (cold):**
mínimum 5 megaohms a 500 V cc.
- **Maximum leakage current (cold):**
máximum 0,5 mA a253 V ca.
- **Tolerance**
Length **L** $\pm 2,5\%$ (mínima ± 1 mm.)
Diameter. **D** $-0,02 -0,06$
Power: $\pm 10\%$
- **Supli voltage:**
Maximum 480V
- **Thermocouple J potential-free**
- **Options**
Power distribution: application-specific

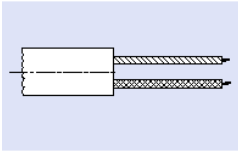
hotrod®
with heat conductive
copper bottom



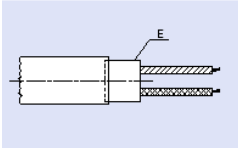
hotrod® CONECTION VERSIONS



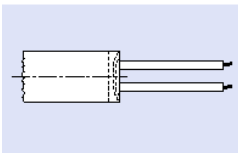
AS 1
External crimped (1000 mm)
Ni glass silk insulated leads
Up to 320 °C



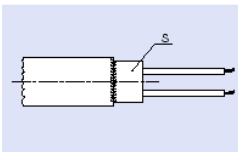
AS 2
Continuous (1000 mm)
Ni glass silk insulated leads
Up to 320 °C



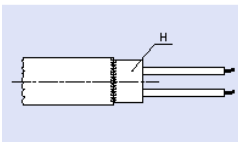
AS 3
UIT ceramic head (E) L ~ 8 mm
Ni glass silk insulated leads 1000mm
From te inside



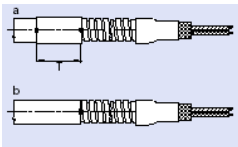
AS 4
Ni Teflón insulated leads with teflón plug
Continuous (1000 mm)
Humidity rersistant
(up to . 260 °C in the head zone)



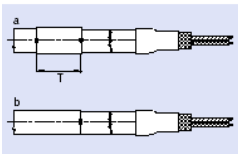
AS 5
Ni silicon insulated leads with tubing saled
by silicon continuous (1000 mm)
Humidity rersistant
(up to . 180 °C in the head zone)



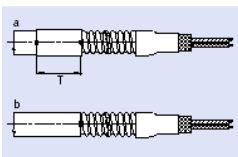
AS 6
Ni silicon insulated leads with tubing saled
by epoxy resin continuous (1000 mm)
Humidity rersistant
(up to . 250 °C in the head zone)



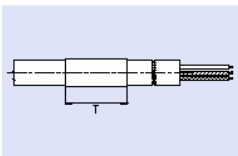
AS 7
Flexible metal sleeving MGS
Zinc-plated steel or stainless steel ad
Ø 6,5 mm and 1/4"
a Fastened with piece of tubing T~40mm
(ø > heater diameter)



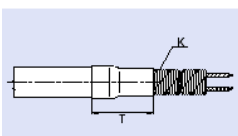
AS 8
Braided metal sleeving DHG
Zinc-plated steel L 900 mm.
a Fastened with piece of tubing ~ 40 mm
(ø > heater diameter)
Mechanical protection



AS 9
Staines steel conduit sleeving EWS
L 900 mm.
a Fastened with piece of tubing ~ 40 mm
(ø > heater diameter)
Gas and water tight (not at cable entry)



AS 10
Multi-stranded silicon cable
Fastened with piece of tubing ~ 40 mm
(ø > heater diameter))
Pressed of embedded



AS 11
Protective spring K
Fastened with piece of tubing ~ 40 mm
(ø > heater diameter))
spring length ~ 100 mm tightly extensible

Options.

Ni silicon insulated leads. (up to 180 °C)
Ni teflón insulated leads (up to . 280 °C)
Extremely high heat resistant leads (up to 600 °C)

Options.

Ni silicon insulated leads. (up to 180 °C)
Ni teflón insulated leads (up to . 280 °C)
Extremely high heat resistant leads (up to 600 °C)

Options

b MGS from the incide ø < heater diameter
MGS plastic covered

Options

b DHG from the inside ø < heater diameter
from Ø 3/8" ,10mm
Shortened piece of tubing min 25mm

Options

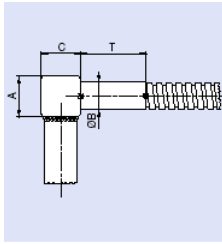
b EWS from the inside ø < heater diameter
from Ø 10mm
Shortened piece of tubing min 25mm

Options

Cable from the inside ø < heater diameter
Humidity rersistant embedded
(up to . 180 °C in the head zone)

Opciones

Protective spring e from the inside ø < heater diameter
from Ø 8 mm
Shortened piece of tubing min 25mm



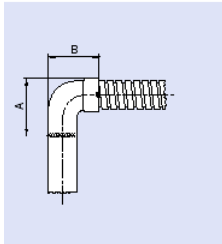
AS 12

Angular Block (stainless steel)
With piece of tubing 40 mm ~ 40 mm

Ø	6,5	8,0	10,0	12,5	16	20,0	1/4"	3/8"	1/2"	5/8"	3/4"
B	7,5	9,0	11,0	11,0	14,0	18,0	7,5	11,0	11,0	14,0	18,0
AxC	10,0	10,0	14,0	14,0	18,0	25,0	10,0	14,0	14,0	18,0	25,0

Options

MGS
DHG
Without piece of tubing
EWS from Ø 10 mm
GLS-sleeving (only combined
with piece of tubing
Humidity resistant embedded
up to . 180 °C



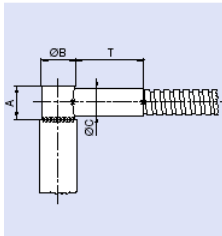
AS 13

Tubular venid /steel casting)

Ø	6,5	8,0	10,0	12,5	16	20,0	1/4"	3/8"	1/2"	5/8"	3/4"
A	17,3	18	22	25	33	39	18	22	25	33	39
B	14,3	15	19	22,3	29	35	14,5	18,8	22,4	26	35

Options

MGS o DHG
GLS-sleeving
with piece of tubing
EWS from Ø 10 mm
Humidity resistant embedded
up to . 180 °C



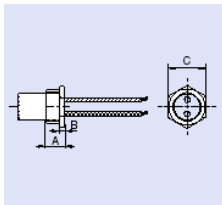
AS 14

Righth angled exit from Ø 8 mm

Ø	8,0	10,0	12,5	16	20	3/8"	1/2"	5/8"	3/4"
A	12	12	13	16	18	12	13	16	18
Ø B	7,5	9	12	15	19,5	9	12	15	18,5
Ø C	7,5	9	11	14	16	9	11	14	16

Options

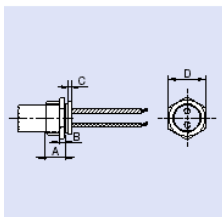
MGS
DHG
GLS-sleeving
with piece of tubing
EWS from Ø 10 mm
Humidity resistant embedded
up to . 180 °C



AS 15

Screw-in nipple (stainless steel)

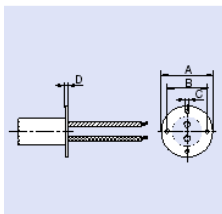
Ø	6,5	8,0	10,0	12,5	16,0	20,0	1/4"	3/8"	1/2"	5/8"
A	10,0	10,0	12,0	12,0	12,0	14,0	10,0	12,0	12,0	12,0
B	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0
C	12	14	17	19	24	27	12	17	19	24
Thread	M10x1	M12x1	M14x1,5	M16x1,5	M20x1,5	M28x1,5	G 1/8"	G 1/4"	G 3/8"	G 1/2"



AS 16

Replacement aid (stainless steel)

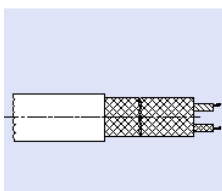
Ø	6,5	8,0	10,0	12,5	16,0	20,0	1/4"	3/8"	1/2"	5/8"
A	10,0	10,0	12,0	12,0	12,0	14,0	10,0	12,0	12,0	12,0
B	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0
C	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5
D	12	14	17	19	24	27	12	17	19	24
Thread	M10x1	M12x1	M14x1,5	M16x1,5	M20x1,5	M28x1,5	G 1/8"	G 1/4"	G 3/8"	G 1/2"



AS 17

Flange (stainless steel)

Ø	6,5	8,0	10,0	12,5	16,0	20,0	1/4"	3/8"	1/2"	5/8"
A	18,0	18,0	27,0	27,0	33,0	33,0	18,0	18,0	27,0	33,0
B	13,0	13,0	20,0	20,0	25,6	25,6	13,0	20,0	20,0	25,8
C	2,2	2,2	3,2	3,2	3,2	3,2	2,2	2,2	3,2	3,2
D	1,0	1,0	1,5	1,6	1,5	1,5	1,0	1,5	1,5	1,5



AS 18

Glass silk insulated protective sleeving
Temperature maxi. 180 °C