



guiding  
connections

## NOVOMICRO DB

### PRODUCT DESCRIPTION

This TDS describe the standard Microducts for direct buried (DB) applications. The ducts are used inside assemblies like Novosplit+ or Novoflat or used individually.

Sizes > 16 mm are covered under optoduct group

Other sizes, colours, marking are possible.

### APPLICATION AREA

- Direct buried for short lengths or in assemblies
- Suitable for subducting
- Drop
- Creating new line



### PRODUCT FEATURES

- Available in lubrication system UD (microcables) or UF (fibre bundles)
- Low inner friction of the microducts < 0,1 due to special inner layer and product design.
- Microducts are DB design with improved impact and strength
- UV stabilised
- Available in 12 colours
- Standard lengths (custom lengths available upon request).
- Sequential markings in meters.
- When installed in loose bundles, easy branching can be done.
- No fixing needed at duct ends during laying.



### Remark:

Soil set will cause strong undulations, for direct buried solution limited lengths should be used.

When used individually, due to small sizes, more accessible for impact compared to assemblies.

### PRODUCT COMPONENTS

<u>Part description</u>	<u>No of parts</u>
1. Microducts DB	1
2. Low friction inner layer	1

Accessible & Watertight Solutions for  
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## PRODUCT SPECIFICATIONS

### Materials

- |  |  |
|--|--|
| <ol style="list-style-type: none"> <li>1. Microduct DB</li> <li>2. Low friction inner layer</li> </ol> | <p>Virgin high density polyethylene classified PE80<br/>UD (micro cables) or UF (fibre bundles)<br/>Contains high molecular weight silicon</p> |
|--|--|

The material for Microduct DB fulfils:

Characteristic	Method	Requirement
Resistance to pressure	ISO 9080 / EN 921	12 MPa / 20 °C / > 1 h 10 MPa / 20 °C / > 24 h 4,6 MPa / 80 °C / > 165 h 4,0 MPa / 80 °C / > 1000 h
Resistance to environmental stress cracking	ISO 13480	≤5 mm / 24 hours
Tensile strength at yield	EN 638	≥ 15 MPa : measured 15 MPa
Elongation at break	ISO 527 (fig 3)	≥ 350 % : measured 500 %

### Lubrication

Property	Novomicro DB				
	7x1,5	10x2	12x2	14x2	16x2
Ribs standard configuration	No	Yes	Yes	Yes	Yes
Standard Lubrication*	UD	UD	UD	UD	UD
COF (Novotech)	≤0,1	≤0,1	≤0,1	≤0,1	≤0,1

\*On request other lubrication is possible. UF can also be used for microcables.

### Dimensions<sup>1)</sup>

Property	Novomicro DB					
	Unit	7x1,5	10x2	12x2	14x2	16x2
Wall thickness	mm	1,5	2	2	2	2
Tolerance OD	mm	±0,1	±0,1	±0,1	±0,1	±0,1
Tolerance wall	mm	±0,1	±0,1	±0,1	±0,1	±0,1
ID	mm	4	6	8	10	12
Tolerance ID	mm	±0,3	±0,3	±0,3	±0,3	±0,3
Max cable OD 3)	mm	2,8	4,3	6	7,2	8,8
Ovality	%	≤5	≤5	≤5	≤5	≤5
Calibration ball test	2)	OK	OK	OK	OK	OK

1) These are the standard dimensions. Other dimensions are on request.

2) Ball with diameter of 85 % of inner diameter of microducts has to pass when duct wound on drum

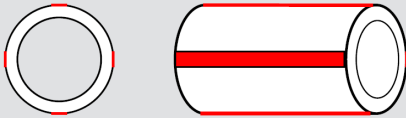
3) Depends on length and condition of installation

## Colours

Following 12 colours are available. See Table below for the RAL colours

The colour is translucent.

If more colours are needed, striped ducts will be delivered.



## Standard sequence of colours

Translucent colors	1	2	3	4	5	6
	Blue RAL 5015	Orange RAL 2003	Green RAL 6017	Brown RAL 8011	Grey RAL 7031	White RAL 9010
	7	8	9	10	11	12
	Red RAL 3016	Yellow RAL 1023	Black RAL 9017	Turquoise RAL 6027	Pink RAL 4003	Violet RAL 4005
Natural with 4 small stripes	13	14	15	16	17	18
	Blue RAL 5015	Orange RAL 2003	Green RAL 6017	Brown RAL 8011	Grey RAL 7031	White RAL 9010
	19	20	21	22	23	24
	Red RAL 3016	Yellow RAL 1004	Black RAL 9017	Turquoise RAL 6027	Pink RAL 4003	Violet RAL 4005

## PRODUCT PERFORMANCE

Property	Novomicro DB						
	Method	unit	7x1,5	10x2	12x2	14x2	16x2
Crushing resistance >450 N	IEC 61386-24	N	1700	2200	1750	1000	800
Pressure rating (PN)	ISO 9080	Bar	31	29	24	20	17
Vertical undulation	Novotech	mm	≤5	≤5	≤5	≤5	≤5
Horizontal undulation	Novotech	cm	≤5	≤5	≤5	≤5	≤5
Tensile resistance on pipe	Novotech measured	N	420	900	1000	1150	1350
	Minimum Required	N	>350	>700	>900	>1050	>1250
Impact resistance -25 °C +50 °C	IEC 60794-1-2	J	6	15	14	13	11
			2,5	6	5	7	7
Punching resistance -5 °C +50 °C	Novotech	J	2	5	6	8	9
			1	3	4	5	6
Bending stiffness	IEC 60794-1-2	N.m <sup>2</sup>	0,061	0,259	0,362	0,794	1,248

### Life time

Products have a expected life time of 50 years when transported, stored and installed in a good way.

UV resistance and storage conditions : See TG 12.

### INSTALLATION

For installation guidelines see IDS 07.

### RELATED PRODUCTS

Related products	Novomicro DB				
	7x1,5	10x2	12x2	14x2	16x2
Novofit connector	Yes	Yes	Yes	Yes	Yes
Novofit protection cover	Yes	Yes	Yes	Yes	Yes
Novofit end stop	Yes	Yes	Yes	Yes	Yes
Gas /water connector	Yes	Yes	Yes	Yes	Yes
Gas / water end stop	Yes	Yes	Yes	Yes	Yes
Pipe cap (black)	Yes	Yes	Yes	Yes	Yes
Pipe cap (yellow)	Yes	Yes	Yes	Yes	Yes
Pipe plug	Yes	<b>No</b>	<b>No</b>	Yes	<b>No</b>

## PACKAGING AND LABELLING

### Packaging

Packaging	Novomicro DB					
	Unit	7x1,5	10x2	12x2	14x2	16x2
Drum	-	A	A	A	A	B
Length	m	3500	2000	1700	1100	2000

A = Watertight wooden drum (1000 mm x 520 mm x 460 mm)

B = Watertight wooden drum (1300 mm x 520 mm x 500 mm)

### Labelling

Standard " 0000 m WAVIN 35 Novomicro DB diameter duct\* wall thickness\*lubrication code Date " ( every 1 m ).

**Option: Numbering and/or specific text in accordance to customer's specification.**

## PRACTICAL RECOMMENDATIONS

Packaging information and guidelines can be found in TG 16.

## NEW DEVELOPMENTS

In case the following parameters are requested an new development has to be started.

- Non-standard drum
- Non-standard colour
- Other stripes
- Other dimensions than the standard one and the ones listed below.
- Smooth pipes

Take care that development time might be needed and investments have to be done, which might not be interesting for small orders.

Small changes like to following points do not need a development.

- Non-standard sizes but one of the sizes mentioned below  
6x1,25 / 6x1,5 / 7x2 / 8x1,8 / 8x2,1 / 8x2,25 / 10 x2,25 / 14x2,2 / 15 x2,7 / 16x3 (see individual TDS) 7x1,75 (see page 6)
- Other marking
- Other lengths on available drums.

## NON STANDARD PRODUCTS – but often requested

Property	Novomicro DB – non standard				
	Method	Unit	7x1,75		
Ribs	-	-	No		
Standard Lubrication*	-	-	UF		
COF	Novotech	-	≤0,1		
Wall thickness	mm	mm	1,75		
Tolerance OD	mm	mm	±0,1		
Tolerance wall	mm	mm	±0,1		
ID	mm	mm	3,5		
Tolerance ID	mm	mm	±0,3		
Max cable OD*	mm	mm			
Ovality	%	%	≤5		
Calibration ball test			OK		
Crushing resistance >450 N	IEC 61386-24	N	2100		
Pressure rating (PN)	ISO 9080	Bar	38		
Vertical undulation	Novotech	mm	5		
Horizontal undulation	Novotech	cm	5		
Tensile resistance on pipe	Novotech measured	N	470		
	Minimum Required	N	400		
Impact resistance -25 °C / +50 °C	IEC 60794-1-2	J	6/1,5		
Punching resistance -5 °C / +50 °C	Novotech	J	1,5/1		
Bending stiffness	IEC 60794-1-2	N.m <sup>2</sup>	0,0762		