ULTIMATE™ Tech Wired Mats
High performance for high temperatures

ISOVER

What do you want to win:
energy cost savings, space savings, weight savings?
Isover ULTIMATE™ Tech Wired Mats
are always offering the right solution

Meeting tomorrow's standards in energy and CO_2 savings for new industrial facilities is sometimes a challenging task for the designer and also the insulator, even more in existing industrial installations. Therefore ISOVER offers innovative solutions with the new ULTIMATE™ Tech Wired Mat product range.

U Tech Wired Mats 6.0 have been designed for optimal thermal insulation, reaching a new level of thermal conductivity especially at high temperatures.
For maximum thermal performance and reduction of CO_2 emissions or for effective thermal insulation with less volume where available space does not allow higher insulation thicknesses – U Tech Wired Mats 6.0 are always the right choice.

U Tech Wired Mats 5.0 are the light alternative to standard wired mats. With optimised product weight and high thermal performance at the same time U Tech Wired Mats 5.0 make the job of insulating easier and safer.

1. Optimal thermal insulation – reducing energy costs and CO_2 emissions

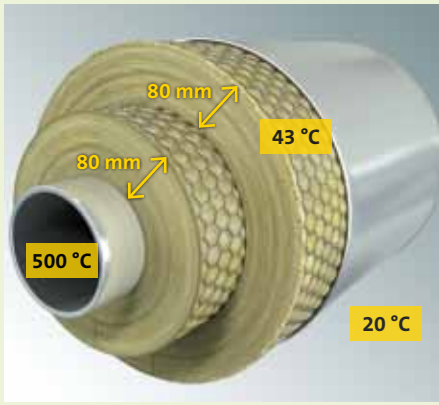
ULTIMATE™ Tech Wired Mats' thermal performance lowers yearly energy operation costs significantly. Increasing energy efficiency and reducing CO_2 emissions of existing pipe and other industrial installations has never been easier. With the same insulation volume U Tech reduces heat losses up to 17 % and more, compared to standard wired mats. So when it comes to revisions only the insulation material needs to be changed to upgrade the energy performance of the whole installation.

The following example shows a typical pipe installation. By comparing a standard two layer solution with the same installation using U Tech Wired Mats 6.0 the thermal loss and so the energy costs of operation can be reduced by 17 %.

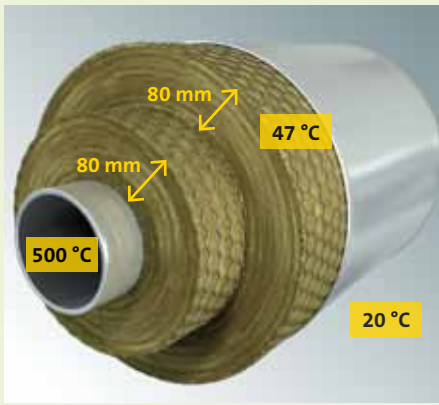
Calculation data*:
pipe: steel pipe, DN 200
medium: overheated steam, temperature 500 °C
ambient temperature: 20 °C
insulation:
1) U Tech Wired Mat 6.0 N, two layers: 80 mm thickness each
2) Standard wired mat 80 kg/m³, two layers: 80 mm thickness each
covering: aluminium-steel cladding
Software: DaemmCalc Technik 2.0

U Tech Wired Mat 6.0
Weight: 10,6 kg/m²
Thermal loss: 267 W/m
Cost of operation at 0,05 €/kWh:
96,- €/m p.a.

Energy cost and CO_2 reduction: 17%



Standard wired mat 80 kg/m³
Weight: 12,8 kg/m²
Thermal loss: 321 W/m
Cost of operation at 0,05 €/kWh:
116,- €/m p.a



*Calculation with exemplary data, media speed 5 m/s, pressure 5 bar, operating hours p. a. 7200, excess charges e.g. for thermal losses and support structures considered only by flat percentages, results rounded.

The following table shows the thermal performance of the U Tech Wired Mats 5.0 and 6.0 depending on middle temperature, measured according to EN 12667, quality controlled by VDI 2055. Additional weight advantages are indicated in comparison to standard wired mats with 80 kg/m³ and 100 kg/m³ density.

Thermal Conductivity $\lambda_{N,P}$ in [W/(m·K)] according to EN 12667

Product T [°C]	50	100	150	200	250	300	400	500	600	Weight increase comparison
U Tech Wired Mat 5.0	0,035	0,041	0,049	0,057	0,067	0,078	0,104	0,138	0,182	**with U Tech Wired Mat 5.0**
Standard 80 kg/m³	0,042	0,047	0,054	0,064	0,075	0,088	0,117	0,164	0,211	≥ 30%
Standard 100 kg/m³	0,040	0,046	0,052	0,060	0,069	0,081	0,109	0,150	0,195	≥ 45 %
U Tech Wired Mat 6.0	0,035	0,040	0,047	0,054	0,063	0,072	0,096	0,126	0,162	**with U Tech Wired Mat 6.0**
Standard 80 kg/m³	0,042	0,047	0,054	0,064	0,075	0,088	0,117	0,164	0,211	≥ 17%
Standard 100 kg/m³	0,040	0,046	0,052	0,060	0,069	0,081	0,109	0,150	0,195	≥ 33%

2. Space saving thermal insulation – less insulation but high thermal performance

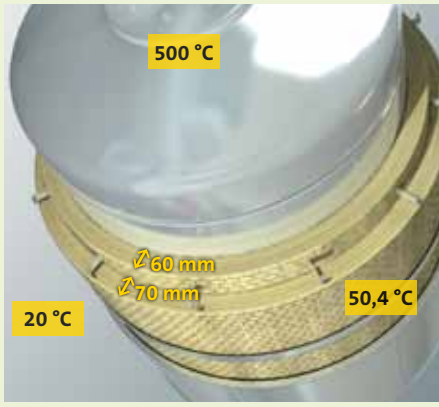
The outstanding thermal performance of the ULTIMATE™ Tech Wired Mats offers space savings and reduced installation time. ULTIMATE™ Tech Wired Mats reach the same thermal insulation effect with less insulation thickness, sometimes up to one layer less than using standard wired mats. Less insulation volume also reduces the total covering surface, thus decreasing the amount (and therefore cost) of metal sheeting required.

The example shows a curved tank wall, one insulated with the new U Tech Wired Mats 6.0 and the other one insulated with a standard wired mat. Using U Tech reduced the total insulation thickness about 20 % from 160 mm to 130 mm whilst reaching the same thermal performance as standard wired mats.

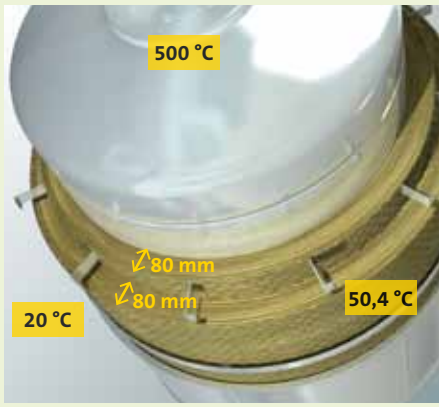
Calculation data*:
tank: curved steel tank wall, 100 m² surface
medium: overheated steam, temperature 500 °C
ambient temperature: 20 °C
insulation:
1) U Tech Wired Mat 6.0 N, two layers: 60 mm and 70 mm thickness each
2) Standard wired mat 80 kg/m³, two layers: 80 mm thickness each
covering: aluminium-steel cladding
Software: DaemmCalc Technik 2.0

U Tech Wired Mat 6.0
Weight: 8,6 kg/m²
Thermal loss: 259 W/m²
Cost of operation at 0,05 €/kWh:
93,- €/m² p.a.

Space Saving: 20%



Standard wired mat 80 kg/m³
Weight: 12,8 kg/m²
Thermal loss: 259 W/m²
Cost of operation at 0,05 €/kWh:
93,- €/m² p.a



3. Weight saving thermal insulation – high thermal performance but with lighter construction

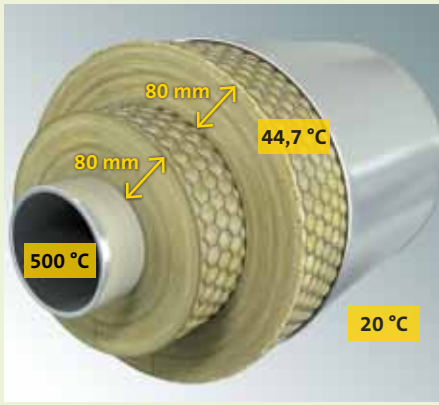
ULTIMATE™ Tech Wired Mats makes installation faster, easier and safer. Due to the light weight of the mats transport and installation is easy and efficient, especially when working overhead or in hard to access areas. The overall constructional design is lighter and therefore the load on the insulation and equipment is reduced, giving more safety.

The example shows again the installation of a pipe insulation with standard wired mats and the new ULTIMATE™ Tech Wired Mats 5.0. Both pipes were insulated with 2 layers of 80 mm thickness. Even with 45 % weight reduction ULTIMATE™ Tech outperforms the thermal behaviour of standard wired mat insulation significantly.

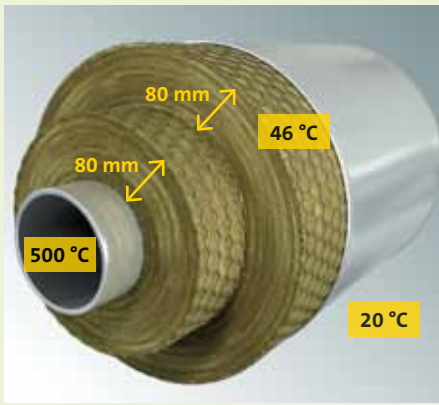
Calculation data*:
pipe: steel pipe, DN 200
medium: overheated steam, temperature 500 °C
ambient temperature: 20 °C
insulation:
1) U Tech Wired Mat 5.0 N, two layers: 80 mm thickness each
2) Standard wired mat 100 kg/m³, two layers: 80 mm thickness each
covering: aluminium-steel cladding
Software: DaemmCalc Technik 2.0

U Tech Wired Mat 5.0
Weight: 8,8 kg/m²
Thermal loss: 287 W/m
Cost of operation 0,05 €/kWh: 103,- €/m p.a.

Weight saving: 45%



Standard wired mat 100 kg/m³
Weight: 16 kg/m²
Thermal loss: 305 W/m
Cost of operation at 0,05 €/kWh: 110,- €/m p.a.



ULTIMATE™ Tech Wired Mats

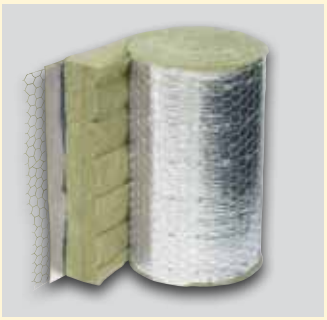
High performance for high temperatures

ULTIMATE™ Tech Wired Mats are setting new standards in industrial high temperature applications.
With ultralight weight U Tech Wired Mats are offering a new class of thermal insulation performance, not known by mineral wool mats before.
Designing industrial piping and other facilities to be much more energy and cost efficient, while saving CO_2 emissions at the same time – that is the light and comfortable way of Isover ULTIMATE™ Tech Wired Mats insulation.

U Tech Wired Mat 5.0 N

Unfaced , stitched with stainless steel wire on galvanised wire mesh

U Tech Wired Mat 5.0 Alu1

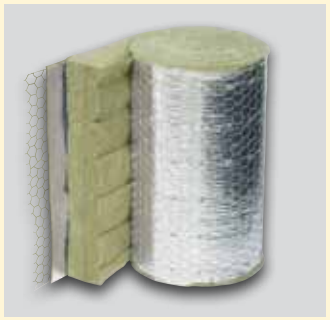


Faced with reinforced aluminium foil, stitched with stainless steel wire on galvanised wire mesh

U Tech Wired Mat 6.0 N

Unfaced, stitched with stainless steel wire on galvanised wire mesh

U Tech Wired Mat 6.0 Alu1



Faced with reinforced aluminium foil, stitched with stainless steel wire on galvanised wire mesh

- Excellent thermal insulation with up to 30% better λ values
  U Tech WM 5.0: $\lambda_{50°C}$ = 0,035 W/(m·K)
  $\lambda_{300°C}$ = 0,078 W/(m·K)
  Maximum Service Temperature: 540 °C
  U Tech WM 6.0: $\lambda_{50°C}$ = 0,035 W/(m·K)
  $\lambda_{300°C}$ = 0,072 W/(m·K)
  Maximum Service Temperature: 620 °C

- Unique lightness up to 45 % less weight than conventional wired mats
- Easy transport and installation at the building site

- Fast and efficient installation due to unique lightness and excellent pliability

- Thinner solutions with better thermal insulation lowering insulation thicknesses or even saving a total insulation layer

- Optimal acoustic performance with length related air flow resistance ≥ 70 kPa·s/m²

- Non combustible, Euroclass A1

- Advantages in logistics and storage due to high compressibility, low weight and extended length

- Active environmental protection and reduction of CO_2 emissions

- Quality controlled according VDI 2055
- AS-Quality
- Hydrophobic
- Insulation material identification number:
  U Tech Wired Mat 5.0: 10.01.02.54.06
  U Tech Wired Mat 6.0: 10.01.03.62.07

ULTIMATE™ Tech Wired Mats

When size really matters...

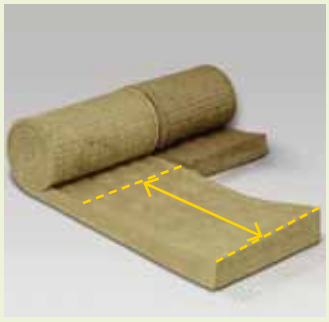
High compression provides you more material on the roll, which saves both time and money. For less transport and carrying on the building site, less waste and cutting when insulating large pipes and ducts. ULTIMATE™ Tech Wired Mats are delivered palletised as high compressed rolls, with two rolls in one package. The package can be easily split in the middle by using the perforated foil. Each roll is equipped with a handle which makes it easy to carry. Because of the light weight of ULTIMATE™ the roll never exceeds the weight of 15 kg.

Up to 80% more material per pallet

Easy to split

Easy to transport

Up to 50% more material per roll



Delivery forms

Thickness	Width	packages /pallet	U Tech Wired Mats 5.0 N / Alu 1				U Tech Wired Mats 6.0 N / Alu 1			
			Length	m²/roll	m²/package	m²/pallet	Length	m²/roll	m²/package	m²/pallet
30	600	18	10.500	6,30	12,60	226,80	10.000	6,00	12,00	216,00
40	600	18	7.900	4,74	9,48	170,64	7.500	4,50	9,00	162,00
50	600	18	6.300	3,78	7,56	136,08	6.000	3,60	7,20	129,60
60	600	18	5.200	3,12	6,24	112,32	5.000	3,12	6,00	108,00
70	600	18	4.500	2,70	5,40	97,20	4.300	3,00	5,16	92,88
80	600	18	3.900	2,34	4,68	84,24	3.700	2,58	4,44	79,92
90	600	18	3.500	2,10	4,20	75,60	3.300	2,22	3,96	71,28
100	600	18	3.100	1,86	3,72	66,96	3.000	1,98	3,60	64,80
120	600	18	2.600	1,56	3,12	56,16	2.500	1,80	3,00	54,00

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