



### **Vidoflex®: The superior thermal insulation**

**Vidoflex®** thermal insulation sleeves, sheets and self adhesive tapes are high quality and reliable products with easy application and outstanding performance. **Vidoflex®** products are manufactured by extrusion from a polymeric compound based on synthetic rubber.

The production process molds **Vidoflex®** into a perfect structure of uniform miniature closed cells providing excellent protection against heat loss,

while preventing moisture absorption and water condensation. **Vidoflex®** provides stable low thermal conductivity (lambda coefficient) and superior flexibility.

The closed-cell structure is ideal for the control of frost and energy, making **Vidoflex®** extremely effective in eliminating condensation and in reducing energy costs.

**Vidoflex®** products are used for the insulation of air conditioners, chillers, heating and ventilation systems, industrial and home refrigeration, automotive parts, construction, shipbuilding, sanitation, liquid vessels and many other applications.

### **Vidoflex® for hot water piping systems**

**Vidoflex®** is very effective in reducing heat loss in indoor and outdoor systems. It is also highly efficient in safeguarding against frost as it dramatically delays the time it takes water to reach freezing temperatures.

**Vidoflex®** is the ideal insulation material for hot water pipes due to the following characteristics:

- High temperature range
- Weather resistance
- Stable low thermal conductivity
- Low water absorption and vapor transmission
- No protective coating necessary (consult with Anavid)
- Outstanding flexibility

### **Vidoflex® for chilled water piping systems**

**Vidoflex®** is applied to cold water pipes to control condensation. **Vidoflex®** insulation products are widely used for chilled water systems, for the following reasons:

- Low water absorption
- Stable low thermal conductivity
- Low water vapor transmission
- Outstanding flexibility



		Test Method	
Density	55÷90 Kg/m <sup>3</sup>	ASTM D 1667	
Thermal Conductivity Coefficient		kcal/mh°c	W/m <sup>2</sup> k
	-20° C	0.0265	0.0308
	0° C	0.0290	0.0330
	+20° C	0.0315	0.0340
	+50° C	0.0343	0.0360
Temperature Range	-60° C ÷ +105° C		
Water Vapour Diffusion	μ > 5000	DIN 52615 + ISO 1663	
Ozone Resistance	No cracking	ASTM D 1171	
Fire Rating	Specification Compliance	Ⓜ BS 476 Part 7 Class 1; 2 BS 476 Part 6 Class 0 Ⓛ DIN 4102-62 B1 Ⓛ L.N.E. - NF M1;M2 Ⓜ NT FIRE-036 KLASS-II Ⓜ C.F.C. Free SFS 4190 CLASS-I Ⓜ NT FIRE-036 KLASS-II Ⓜ KLASS 2 (NEN 3883) Ⓜ BRANDKENNZIFFER-5.2 Ⓜ B 3600 Teil 1	
Thermal stability	Excellent		
C.F.C	Free		
Resistance to Oil and Grease	Excelent		
Water Absorption	1% (Vol) Max	ASTM D 1056-59T	
	10% (Wt) Max	ASTM D 1056-78	

**vidoflex**® APPROVED BY: LLOYD'S REGISTER OF SHIPPING - TYPE APPROVAL CERTIFICATE NO.: 2403-1518  
 FIW MUNCHEN - NO - U 2.68/97  
 DEUTSCHES INSTITUT FUR BAUTECHNIK ZULASSUNG NO : Z - 23.14-1079  
 LNE NF-37

## Recomended Insulation Wall Thickness

( Full calculations to be found in **vidosoft**® software)

Ambient Conditions	Pipe Size Outside Diameter	Line Temperature			
		-40°C -40°F	0°C 32°F	50°C 122°F	100°C 212°F
Nominal Thickness of Insulation					
Normal	6mm - 16mm O.D.	9mm (3/8")	6mm (1/4")	6mm (1/4")	9mm (3/8")
Normal	16mm - 61mm O.D.	19mm (3/4")	13mm (1/2")	9mm (3/8")	13mm (1/2")
Normal	61mm - 140mm O.D.	25mm (1")	19mm (3/4")	13mm (1/2")	19mm (3/4")
Abnormal	6mm - 140mm O.D.	32mm (1 1/4")	25mm (1")	13mm (1/2")	19mm (3/4")

Normal Ambient conditions: 20° + 5°C (68° + 9°F) Relative humidity: 60 + 5%  
 Abnormal Ambient conditions: 30° + 5°C (86° + 9°F) Relative humidity: 80 + 5%

The loss of heat from a ducting pipe depends on the difference in temperatures between the fluid in the pipe and the enviroment, and on the diameter of the pipe. The table is based on calculations designed to reduce heat loss by over 60% with the use of **vidoflex**® insulation.

## Under Special Conditions

	MODE								
	FREE-AIR			ALUMINUM SHEET			PLASTIC SHEET		
Convection Coefficient	9 w/m <sup>2</sup> °C			7 w/m <sup>2</sup> °C			5 w/m <sup>2</sup> °C		
Relative Humidity	55%	65%	75%	55%	65%	75%	55%	65%	75%
Min. Wall Thickness [mm]	3.8	6.9	12.4	4.9	8.9	16.0	6.9	12.4	22.4

# Dimensions and Tolerances

NOMINAL INTERNAL DIAMETER	PIPE EXTERNAL DIAMETER						INTERNAL DIAMETER TOLERANCE	THICKNESS															
	COPPER TUBE		STEEL PIPE		PLASTIC PIPE			C		D		F		H		M		R		T			
	ins.	mm.	ins.	mm.	ins.	mm.		4mm	6mm (1/4")	9mm (3/8")	13mm (1/2")	19mm (3/4")	25mm (1")	32mm (1 1/4")	3.5 - 6.0	5.0 - 9.0	8.0 - 13.5	11.0 - 19.0	17.0 - 28.0	22.0 - 33.0	28.0 - 42.0		
						Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
6	1/4"	6.35	—	—	—	—	6.5	8.5	3.5	5.5	5	7	8	10	—	—	—	—	—	—	—	—	—
8	5/16"	7.9	—	—	—	—	8.5	10.5	3.5	5.5	5	7	8	10.5	—	—	—	—	—	—	—	—	—
10	3/8"	9.5	1/8"	10.2	—	—	10.5	12.5	3.5	5.5	5	7	8	10.5	11	14	17	19	—	—	—	—	—
12	1/2"	12.7	—	—	—	12	13	14.5	3.5	5.5	5	7	8	10.5	11	14	17	19	22	22.5	—	—	—
14	9/16"	14.3	1/4"	13.5	—	—	14.5	16.5	3.5	5.5	5.5	7.5	8	10.5	11	14	17	19.5	22	22.5	—	—	—
15	5/8"	15.9	—	—	—	16	16.5	18	3.5	5.5	5.5	7.5	8.5	10.5	11.5	14	17	20	22	26	—	—	—
17	1 1/16"	17.5	3/8"	17.2	—	—	18	19.5	3.5	5.5	5.5	7.5	8.5	10.5	11.5	14.5	17	20	22	26	28	34	—
18	3/4"	19.05	—	—	—	—	19.5	21	3.5	5.5	5.5	7.5	8.5	11	11.5	14.5	17	20	22	26	28	34	—
22	7/8"	22	1/2"	21.3	—	20	22.5	24.5	3.5	5.5	6	7.5	8.5	11	11.5	14.5	18	20	23	27	29	35	—
25	1"	25.4	—	—	—	25	26	28	3.5	5.5	6	7.5	8.5	11	11.5	14.5	18	20	23	27	29	35	—
27	1 1/16"	27	3/4"	26.9	—	—	28	30	3.5	5.5	6	7.5	9	11	12	15	18	20	23	27	30	36	—
28	1 1/8"	28.6	—	—	—	—	29	31	3.5	5.5	6	8	9	11	12	15	18	20	23	27	30	36	—
30	1 3/16"	30.2	—	—	—	—	31	33.5	3.5	5.5	6	8	9	11	12	15	18	20	23	27	30	36	—
35	1 1/2"	34.9	1"	33.7	—	32	36	39	3.5	5.5	6.5	8.5	9.5	11.5	12	15	18.5	21	24	28	31	37	—
42	1 5/8"	41.3	1 1/4"	42.4	—	40	43	46	3.5	5.5	6.5	8.5	9.5	12	12.5	15.5	18.5	21	24	28	31	37	—
45	1 3/4"	44.5	—	—	—	—	46	49.5	3.5	5.5	6.5	8.5	9.5	12	12.5	15.5	18.5	21	24	28	31	37	—
48	—	—	1 1/2"	48.3	—	—	50	53	4	6	6.5	8.5	10	12	12.5	15.5	19	21.5	25	29	32	38	—
54	2 1/8"	54	—	—	—	50	55	58	—	—	7	9	10.5	12	13	16	19	21.5	25	29	32	38	—
57	2 1/4"	57.1	—	—	—	—	58.5	62.1	—	—	—	—	10.5	12	13	16	19	21.5	25	29	32	38	—
60	2 3/8"	60.3	2"	60.3	—	—	62	65.5	—	—	—	—	10.5	12	13	16	19	21.5	25	29	32	38	—
67	2 5/8"	66.7	—	—	—	63	67	70.5	—	—	—	—	10.5	12	13	16	19	21.5	25	29	32	38	—
70	2 3/4"	69.85	—	—	—	—	72	76	—	—	—	—	10.5	13	13	16	19.5	22	26	30	33	39	—
76	3"	76.20	2 1/2"	76.1	—	75	78	82	—	—	—	—	10.5	13	13.5	16.5	20	22.5	26	30	33	39	—
80	3 1/8"	79.4	—	—	—	—	82	86	—	—	—	—	10.5	13	13.5	16.5	20.5	23	26	30	33	39	—
90	3 1/2"	88.9	3"	88.9	—	90	91.5	96	—	—	—	—	10.5	13	13.5	16.5	20.5	23	26	30	33	39	—
101	4"	101.6	3 1/2"	101.6	—	—	104	109	—	—	—	—	11	13.5	14	17	21	24	26	30	34	40	—
104	4 1/8"	104.8	—	—	—	—	106	111	—	—	—	—	11	13.5	14	17	21	24	26	30	34	40	—
108	4 1/4"	108	—	—	—	110	110	116	—	—	—	—	11	13.5	14	17	22	25	26	30	34	40	—
114	4 1/2"	114.3	4"	114.3	—	—	117	123	—	—	—	—	11	13.5	14	17	22	25	26	30	34	40	—
127	5"	127	—	127.0	—	125	129	136	—	—	—	—	12	14	14.5	17.5	23	26	27	31	34	40	—
133	—	133	—	133.0	—	—	135	138	—	—	—	—	12	14	14.5	17.5	23	26	27	31	34	40	—
140	—	140	—	139.7	—	140	141.5	145.5	—	—	—	—	12	14	14.5	17.5	23	26	27	31	34	40	—

## vidoflex<sup>®</sup> - Sheet

Tolerances

THICK.mm.	MIN. mm.	MAX. mm.
6	6	7.5
9	9	10.5
13	13	14.5
16	16	18
19	19	22
25	25	28
32	32	35

WIDTH.mm.	LENGTH. mm.
(+2% - 0)	(+1% - 0)

## Self adhesive tape

THICK.mm.	WIDTH. mm.	LENGTH mm.
3.2 (+1 - 0)	50 (±2%)	10 (±1%)



# Technical Data

## vidoflex® - Technical Data

PHYSICAL PROPERTIES	TESTING INSTITUTES	NORMS & TEST METHODS	RESULTS
Density	Rubber Research Association Ltd.	ASTM D 1667	55- 90 kg/m <sup>3</sup>
Temperature Range	"Anavid" Laboratory		-60°C - +105°C
Thermal Conductivity	Fiw Munchen	Din 52612 / 52613	$\lambda_R = 0.039 \text{ W/m}^{\circ}\text{K}$ at +40°C
	Forschungsinstitut Fur Wärmeschutz E.V Munchen	ASTM C 177 DIN 52 613 ISO / (AS) 2581 - 1975	$\lambda = 0.0308 \text{ W/m}^{\circ}\text{K}$ at - 20°C $\lambda = 0.0360 \text{ W/m}^{\circ}\text{K}$ at + 50°C
	Osterreichisches Kunststoffinstitut	B 3800	Teil 1 (AUS)
Water Vapour Diffusion	Forschungsinstitut Fur Wärmeschutz E.V Munchen	ISO 1663 + DIN 52615	$\mu \geq 5000$
Water Absorption	Rubber Research Association Ltd.	ASTM D 1056-59T ASTM D 1056-68	1% (vol) max. 10% (wt) max.
Thermal Stability	"Anavid" Laboratory		Excellent
Ozone Resistance	Rubber Research Association Ltd.	ASTM D 1171	50 pphm concentration -bent-72 hours: no cracking
U.V. Resistance (Q-panel)	Rubber Research Association Ltd.	During 4 hours 100% humidity	After 7 days: No cracks After 14 days: No cracks
Weathering	"Anavid" Laboratory	Outdoor test	* Indicated life span: 3-5 years unpainted 8-10 years painted
Cell Structure			Fine closed cell structure
Resistance to oil and grease	"Anavid" Laboratory		Excellent
Fire Rating	Warrington Fire (GB) Research Center	B5 476 part 6 & 7 Building Regulations - E15	Class 1 Class "0"
	Hannover University (D) MPA - NRW (D) Rijksuniversiteit Gent	DIN 4102 Teil 1	Class B2 Class B1
	LNE (VIDOSOL) (F)	NF P92 - 501	Class M1 - NF
	Monsanto Loovain La Neuve-Belgium	NF P92 - 501	Class M1
	Polysar Center Technique-Belgium	NF P92 - 501	Class M1
	Statens Provningsanstalt (SW)	NT Fire: 036,012,002.	Klass II
	Vallion Teknillinen Tutkimuskeskus (SF)	SFS 4190	Klass I
	TNO (NL)	NEN 3683	Klasse 2
	STATNFS (N) Bygningstekniske Etat	Fire Test (Certificate No: 2403-1518)	Brannklasse A30-A120
<b>vidoflex®</b> Approved By:	LLOYD'S REGISTER OF SHIPPING - TYPE APPROVAL CERTIFICATE NO.: 2403-1518 FIW MUNCHEN - NO - U 2.63/97 DEUTSCHES INSTITUT FUR BAUTECHNIK ZULASSUNG NO.: Z - 23.14-1079 LNE NF-37		



\* ANAVID RECOMMENDS TO PROTECT ALL OUTDOOR INSULATED SYSTEM WITH VIDOFINISH OR SIMILAR PAINT

All statements and technical information contained herein are based on laboratory test we believe to be reliable, but the accuracy or completeness is not guaranteed under all circumstances. All flammability rating and specifications are based on laboratory test and do not describe the performance of these materials in an actual fire situation. Before using Anavid Insulation Products the user has to determine suitability for the intended use, and assumes all responsibility for improper selection.