 # ficha técnica

AQUATHERM **BLUE**

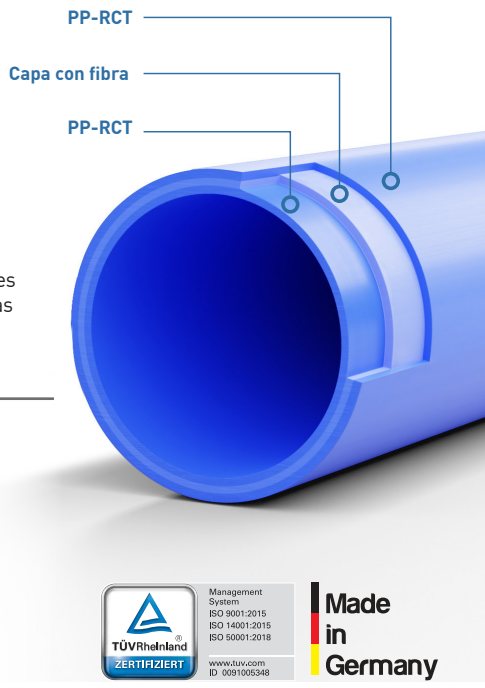
aquatherm blue MF RP SDR 17.6

Definición del **sistema** __

Tubería de polipropileno copolímero random, PP-RP [PP-RCT] con comportamiento a la presión mejorada (raised pressure), compuesta, con capa intermedia de fibra de vidrio MF (FASER), [PP-RCT/PP-RCT+FV/PP-RCT] serie 8,3/SDR17,6 fabricada según SKZ HR 3.28 DIN 8077 DIN 8078, En color azul, con coeficiente de transmisión térmica 0,15 W/mK, . Sistema con certificado NSF/ANSI Standard 14 (ASTM F2389), SKZ (HR 3.28) y Declaración Medioambiental de Producto (EPD).

Características **físicas y mecánicas** __

Propiedades	fusiolen® PP-R/PP-RCT fibra
Índice de fluidez 190 °C/5 kg	0,5 g/10 min.
Índice de fluidez 230 °C/2.16 kg	0,3 g/10 min.
Módulo de elasticidad	1200 N/mm^2
Límite elástico	30 N/mm^2
Densidad	1,0 g/cm^3
Resistencia a la tracción	35 MPa
Temperatura de inflamación	490–500 °C
Coeficiente de dilatación térmica	0.35 $*10^{-4}$ K^{-1}
Coeficiente de transmisión térmica	0,15 W/mK
Coeficiente de fricción	0,007
Radio de curvatura	
Absorción de agua	< 0,02 %
Relative permittivity	2,3 (in case of 1 MHz)
Puncture voltage	00 kV/cm
Resistencia específica	> 10^{17} Ω cm
Resistencia superficial	10^{14} Ω
Coeficiente de disipación	0.0002 (in case of 50 Hertz)



Campos de **aplicación** __

refrigeración	conexiones calefacción y refrigeración	calefacción	aplicaciones marítimas	piscinas	superficies deportivas
o	o	o	o	o	o

Management System ISO 9001:2015 ISO 14001:2015 ISO 50001:2018 TÜVRheinland ZERTIFIZIERT www.tuv.com ID 0091005348

Made in Germany

Dimensiones del sistema__



MF = multi-layer, fibre-reinforced
RP = raised pressure resistance

aquatherm blue SDR 17,6 MF RP

Article no.	d	s	di	l/m	kg/m	DN	PU [m]
socket welding / soldadura a enchufe							
2017125224	125	7,1	110,8	9,637	2,666		4
butt welding / soldadura a tope							
2017160026	160	9,1	141,8	15,792	4,390		5,8
2017200028	200	11,4	177,2	24,661	6,927		5,8
2017250030	250	14,2	221,6	38,568	10,636		5,8
2017315032	315	17,9	279,2	61,223	16,606		5,8
2017355034	355	20,1	314,8	77,832	21,589		5,8
2017400036	400	22,7	354,6	98,756	27,468		5,8
2017450038	450	25,5	399,0	125,036	34,716		5,8
2017500040	500	28,4	443,2	154,272	42,955		5,8
2017630042	630	35,7	558,6	245,070	68,044		5,8

SDR 17.6

ø: 125–630 mm

Pipe series:	**SDR 17.6/ S 8.3**
Material:	fusiolen® PP-RCT
Standards:	SKZ HR 3.28, ASTM F 2389, DIN 8077 , DIN 8078 CSA B 137.11, ISO 21003 ASTM F 2389, CSA B 137.11, ISO 21003
Colour:	blue
Packing unit:	straight lengths 5,8 m

Distancia entre **soportes**__

Diferencia de temperatura [K]	**SDR 17,6 MF - Diámetro de tubería d (mm)**								
	160	200	250	315	355	400	450	500	630
	Distancia entre soportes en cm								
0	260	265	275	280	285	295	305	315	330
20	190	200	205	210	215	230	240	255	280
30	180	190	195	200	205	220	230	245	275
40	175	180	190	190	195	210	225	235	265
50	165	175	180	185	190	200	215	230	255
60	155	165	170	175	180	185	200	215	240
70	145	155	160	170	175	180	190	205	230



Nota: Las distancias máximas de tablas (cm) están referidas a horizontales. En caso de vertical puede aumentarse los valores x 1.25

Presiones de servicio admisible para aplicaciones generales en funcionamiento permanente __

Años de servicio	aquatherm blue SDR 17.6 MF RP
temperatura hasta 10 °C (50 °F)	
10	13.1 bar
25	12.9 bar
50	12.7 bar
100	12.6 bar
temperatura hasta 15 °C (59 °F)	
10	12.3 bar
25	12.1 bar
50	11.9 bar
100	11.7 bar
temperatura hasta 20 °C (68 °F)	
10	11.4 bar
25	11.2 bar
50	11.0 bar
100	10.9 bar
temperatura hasta 30 °C (86 °F)	
10	9.8 bar
25	9.6 bar
50	9.5 bar
100	9.4 bar
temperatura hasta 40 °C (104 °F)	
10	8.4 bar
25	8.3 bar
50	8.1 bar
100	8.0 bar
temperatura hasta 50 °C (122 °F)	
10	7.2 bar
25	7.0 bar
50	6.9 bar
100	6.8 bar
temperatura hasta 60 °C (140 °F)	
10	6.1 bar
25	5.9 bar
50	5.8 bar
temperatura hasta 70 °C (158 °F)	
10	5.1 bar
25	5.0 bar
50	4.9 bar
temperatura hasta 75 °C (167 °F)	
10	4.6 bar
25	4.5 bar
50	4.4 bar
temperatura hasta 80 °C (176 °F)	
5	4.3 bar
10	4.2 bar
25	4.1 bar
temperatura hasta 90 °C (194 °F)	
5	3.5 bar
10	3.4 bar

SDR = Standard Dimension Ratio (diámetro/espesor pared)

S = single-layer (mono capa)

MF = multicapa fibra

MF RP = multicapa fibra – raised pressure resistance

Para los accesorios de segmentos de tubería soldados a tope es efectivo un factor de reducción de 0,75 (reducción de los valores de la tabla en un 25 %).

Certificados__



NSF International
789 N. Dixboro Road, Ann Arbor, MI 48105 USA

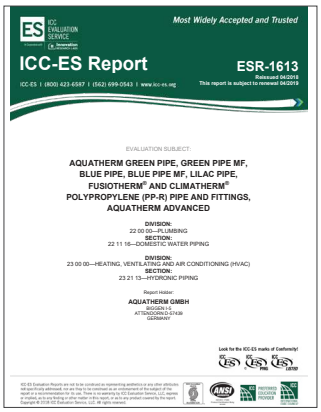
RECOGNIZES

Aquatherm GmbH
Germany

AS COMPLYING WITH NSF/ANSI 14, 61, 358 AND ALL APPLICABLE REQUIREMENTS.
PRODUCTS APPEARING IN THE NSF OFFICIAL LISTING ARE
AUTHORIZED TO BEAR THE NSF MARK.

May 12, 2015
Certificate# 03850 - 03

David Purkiss
General Manager, Water Systems



Most Widely Accepted and Trusted

ICC-ES Report

ESR-1613

AQUATHERM GREEN PIPE, GREEN PIPE MF, BLUE PIPE, BLUE PIPE MF, LILAC PIPE, FUSIOTHERM® AND CLIMATHERM® POLYPROPYLENE (PP-R) PIPE AND FITTINGS, AQUATHERM ADVANCED

DIVISION: 22 00 00—PLUMBING
SECTION: 22 11 16—DOMESTIC WATER PIPING

DIVISION: 23 00 00—HEATING, VENTILATING AND AIR CONDITIONING (HVAC)
SECTION: 23 21 13—HYDRONIC PIPING

Report Holder:
AQUATHERM GMBH
BIGGEN 5
ATTENDORN, D-5439
GERMANY



IAPMO RESEARCH AND TESTING, INC.

CERTIFICATE OF LISTING



ABS

Confirmation of Product Type Approval

Company Name: AQUATHERM GMBH
Address: BIGGEN 5, ATTENDORN, Germany, D-57439
Product: Thermoplastic Pipe, Fittings and Joints
Model(s): Aquatherm blue pipe SDR11 MF; SDR11 S; SDR7,4 MF; SDR17,6 MF Aquatherm green pipe SDR11 S; SDR9 MF-RP; SDR7,4 MS; SDR7,4 MF;SDR7,4 S; SDR6 S Aquatherm green pipe fittings Aquatherm red pipe SDR7,4 MF-HI

Endorsements:

Certificate Type	Certificate Number	Issue Date	Expiry Date
Product Design Assessment (PDA)	21-2086756-PDA	03-FEB-2021	02-FEB-2026
Manufacturing Assessment (MA)	20-HW4068276	15-JAN-2020	04-JAN-2025
Product Quality Assurance (PQA)	NA	NA	NA

Tier
3 - Type Approved, unit certification not required

Intended Service
Potable water, sanitary water, grey and black water, sanitary drains (internal), water-heating piping systems, ballast piping (only inside ballast water tanks, cofferdams, void spaces, pipe tunnels, ducts) and non-essential systems for the installation locations subject to compliance with requirements of 4-6-3/Table 1, Table 2 and Table 3 of ABS Rules for Building and Classing Marine Vessels 2021.

Description
Thermoplastic pipes and fittings, material: PP-R.

Type 'stabi composite': multi layer composite PP pipes with intermediate aluminum foils.

Type 'laser composite': composite PP-R pipes with inner fibre layer.

Types:
aquatherm blue pipe SDR 17,6 MF-RP
aquatherm blue pipe SDR 11 MF-RP
aquatherm blue pipe SDR 11 S
aquatherm green pipe SDR 11 S
aquatherm green pipe SDR 9 MF-RP
aquatherm green pipe SDR 7,4 MS



ZERTIFIKAT

SKZ - Testing GmbH awards the following company

aquatherm GmbH
Biggen 5
57439 Attendorn
Deutschland

A 818

for the following plastic products

Pressure piping systems
Fibre multilayer pipes made of PP-RCT/PP-RCT-GF/PP-RCT

Würzburg, 29 September 2020

Dipl.-Ing. Hans-Peter Krause
Head of Certification Body



B 5174

Declaración medioambiental de producto **EPD** __



Environmental Product Declaration

Polypropylene (PP-R) Pressure Piping Systems
ENVIRONMENTAL PRODUCT DECLARATION

The declared, average piping system includes the following products:

- aquatherm green pipe, mechanical piping that is especially suited for potable water and food-grade applications;
- aquatherm blue pipe, mechanical piping that is especially suited for heating and chilled water, condenser water, and industrial and chemical process systems;
- aquatherm lilac pipe, mechanical piping that is specifically intended for non-potable, reclaimed or recycled water, rainwater catchment, and irrigation systems;
- aquatherm red pipe, mechanical piping that is specifically intended for light hazard fire suppression systems; and
- aquatherm black system, a radiant panel system that is used to provide energy-efficient radiant heating and cooling for any size building, from single-family homes to large high-rise commercial facilities

Contact:
aquatherm GmbH
Biggen 5
57439 Attendorn
Germany

Environmental Product Declaration



bre

Statement of Verification
BREG EN EPD No.: 000478 Issue 01

This is to verify that the
Environmental Product Declaration
provided by:
Aquatherm, GmbH
is in accordance with the requirements of:
EN 15804:2012+A2:2019
and
BRE Global Scheme Document SD207

This declaration is for:
1m of green/blue S / MF / MF-RP piping system

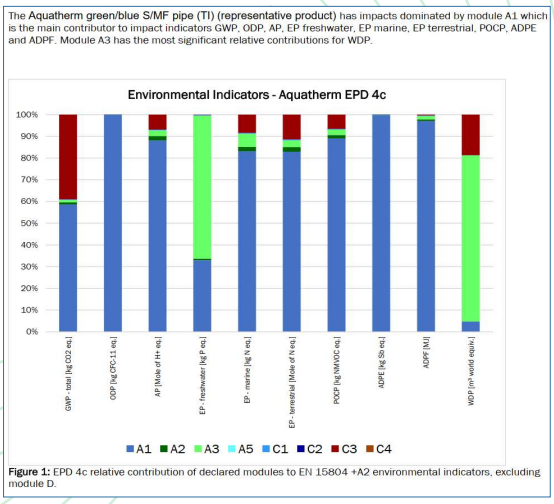
Company Address
Aquatherm, GmbH
Biggen 5,
57439 Attendorn,
Germany

aquatherm

10 February 2023
09 February 2028

BRE Global Verified EPD

EPD VERIFIED



The Aquatherm green/blue S/MF pipe (TI) (representative product) has impacts dominated by module A1 which is the main contributor to impact indicators GWP, ODP, AP, EP freshwater, EP marine, EP terrestrial, POCP, ADPE and ADPF. Module A3 has the most significant relative contributions for WDP.

Environmental Indicators - Aquatherm EPD 4c

100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%

GWP - total [kg CO2 eq.]
ODP [kg CFC-11 eq.]
AP [Mole of H+ eq.]
EP - freshwater [kg P eq.]
EP - marine [kg N eq.]
EP - terrestrial [Mole of N eq.]
POCP [kg NMVOC eq.]
ADPE [kg Sb eq.]
ADPF [MJ]
WDP [m³ world equiv.]

A1 A2 A3 A5 C1 C2 C3 C4

Figure 1: EPD 4c relative contribution of declared modules to EN 15804 +A2 environmental indicators, excluding module D.

aquatherm®



Part of the solution
www.aquatherm.es

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