



PPR
PIPE & FITTINGS

bw
Bright Water



PRICE
PRODUCT
PROMOTION



TABLE OF CONTENTS

CERTIFICATIONS	1
INTRODUCTION	2
PRESIDENT MESSAGE	3
QUALITY MANAGEMENT	4
VISION	4
MISSION	4
WHY BRIGHT WATER?	4
THE TECHNICAL PROPERTIES OF BRIGHT WATER PPRC	4
QUALITY CONTROL	5
PPRC ENVIRONMENTAL	6
GENERAL INFORMATION	7
SPECIFICATIONS	8
PPRC BOILER SET	9
SERVICE LIFE OF PPRC	10
WELDING PROCESS	11
PRODUCT SPECIFICATIONS	12

CERTIFICATIONS





INTRODUCTION

Bright Water Rubber & Plastic manufacturing company has been established in 2013 as a manufacturer of Plastic Polyvinyl Chloride PVC Pressure and non-Pressure pipe system for cold and potable water and other industrial uses. Bright Water After succeeding in PVC & U-PVC piping system, has Started the production of PVC, U-PVC, PPR- C, HDPE pipes & Fittings with Advance Technology. Customer focus, quality and innovation are reflected in every aspect of our business.

Our strength lies in pre-empting customer expectations and product demands. Bright Water today is a trademark of reliability, durability and stability. Our team is highly skilled and experienced which uses the most advanced technology on its production line and retains the modern management system.

As a group, we are committed to high ethical business values, quality of products, committed deliveries and competitive pricing. These factors have contributed to our success ensuring our success at all levels.

We have developed and designed a setup and system in place which can meet your requirements and needs beyond your hopes and expectations.

We believe that our strength lies in satisfying our customers and clients. That is why, providing quality products backed by superior technical support services, is the Bright Water promise to all our valued customers. Besides its unique place in Afghanistan plastic and Hand Pumps industry, Bright Water products are exported to various other countries and thus play an important role in economy of Afghanistan.



President Message

First of all I, on behalf of Bright Water Rubber & Plastic Manufacturing Company; would like to introduce you Bright Water, Bright Water like many other companies invests millions of Afghanis in its communities annually through different programs and events. They understand that community investment is a necessary component of a sustainable business and its subsequent growth and recognizes that corporations can utilize unique resources, including the expertise of their employees through volunteerism, to positively impact societal problems and issues. Founded in 2013 & continued to inspire and challenge leaders in the private and public sector to find innovative ways to fulfil unmet community needs and to lead the way towards better management of business and societal strategies and policies. Through our convening power, a focus on measurement, and the extensive resources we provide to customers, employees, investors, nonprofits organizations, governments, and other businesses.

We provide thought leadership in the field through our recognized events and forward-looking research reports in the time of economic volatility and uncertainty. Today's business leaders are keenly aware of the heightened needs in their communities around the world. Bright Water encourages corporate CEOs to think carefully about the societal issues that will affect their companies in the next decade,

and to proactively engage in addressing those issues, in collaboration with customers, employees, investors, nonprofits organizations, governments, and other businesses. To develop, grow, struggle to achieve perfection through advanced technology and utilize all its resources in order to ensure long lasting customer satisfaction are the objectives of Bright Water. Thanks to reliable, strong, easily accessible and easy-to-use products and perfect after sale support, Bright Water achieves its target perfection. Bright Water is ready to achieve its goals and objectives through regular investments in communities by implementing various mechanisms and Technics.

I, on behalf of Bright Water; would like to request you to kindly consider our request favorably to add us in the list of your vendors and to give us the opportunities to work close with you in the categories of all activities which is included in our Corporation.

I am looking forward to working close with your organization on a long term basis.

Hamid Ahmadzai
President

Quality Management

At Bright Water quality is high priority and the foundation of all our processes and operations. Each and every one of us here at Bright Water is committed to consistently achieving the highest quality standards in our products and services, with the aim of satisfying and exceeding the requirements and expectations of our customers. This goes for every area of our business.

Bright Water Rubber & Plastic Manufacturing Company is Germany (DAB) ISO 9001:2008 for Quality Management System, 14001:2015 for Environmental Management System & 18001:2007 for Health & Safety Management System Certified Company. Which have been dedicated itself through the production of superior materials ensuring cost effectiveness, hurdle freedom and high quality in all aspects of business. We are using innovative, adoptive and modern technologies available in the industry to ensure all specific customers' requirements and expectations are met all the times with comfort and satisfaction which will enhance our production quality, performance and profitability. This is the culmination of our dedicated efforts to manufacture superior product to our national and international clients by providing exceptional value, consistent performance and creative production solutions by which we have been promoting our ever-lasting and productive working relationship.

Each and every single piece of pipes & fittings are subjected to a detailed inspection & testing by trained and experienced staff to detect dimensional inaccuracies, surface imperfections and its conformity with applicable standards.

Our quality policy includes:

- ❖ Strict observance to a quality management system that complies with all quality oriented standards.
- ❖ Our quality policy is maintained throughout our business in accordance with our commitment to customer and regulatory requirements.
- ❖ Our quality policy is communicated to all employees and they are actively involved in the development of its objectives.

We believe in open and honest communication to all our customers and staff within a trusted environment.

Vision

To become the leading manufacturing Company for PVC, U-PVC, PPRC & HDPE Pipes & Fittings and services at national and international levels.

Mission

Profitable growth through superior customer service, innovation, quality and commitment. To be the leader in every market we enter and serve, to the benefit of our customers and shareholders The company's primary objective is to maximize long – term customer value, while adhering to the highest manufacturing standards

Why Bright Water?

Bright Water Pipes & Fittings offer the greatest combination of versatility, durability and longevity, and gives importance to quality control and:

1. Uses the most advanced technology.
2. Has highly skilled and experienced team.
3. Produces Pipes in Compliance with (TS), (TSEN), (DIN) & (DVGW) Standards
4. Uses the most suitable raw materials.
5. Produces pipes & fittings as per international standard.
6. Controls Quality at each stage of production & has well equipped laboratory
7. Committed to high ethical business values and competitive pricing.

Technical Properties of Bright Water PPRC Pipes & Fittings.

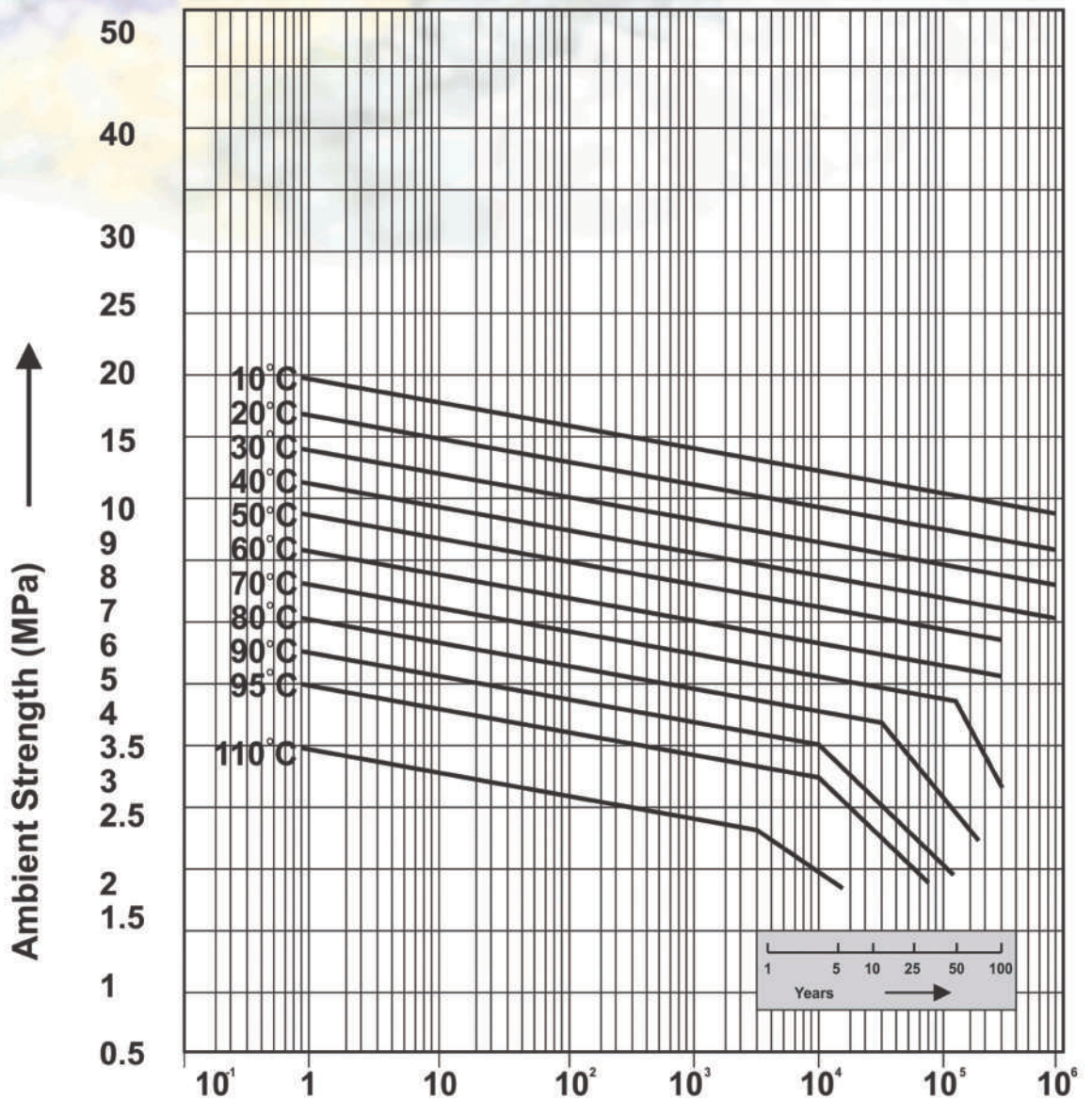
1. Raw Materials: (TYPE1), (TYPE2), (TYPE3)
2. Superior Physical Characteristics at 90C,
3. High Chemical Resistance,
4. Definite solutions to calcification and corrosion,
5. No bacteria and moss reproduction within the pipes,
6. Light, easy to install and low labour costs and installation,
7. Safe to use various pressurized liquids and gas
8. No reduction in diameter at the welding points,
9. Longer service life, (50 years)
10. Isolation is not necessary in the buildings,
11. Operation temperature is between 70 C – 90 C; it does not absorb water. It can easily be used in hot humid.
12. Can be used in drinking water systems

Raw materials

Bright Water Products do not have any adverse effects on human health. It is approved and certified that water does not change its taste and odor and contains no carcinogens by companies in Germany which serve internationally such as TZW and HYG.

Raw Material of Polypropylene Copolymer [PP-R] and the raw material of polypropylene copolymer [PP-R] and raw material glass fiber reinforced polypropylene [PPR-GF] used in Bright Water Pipes and Fitting are produced from the world's proven highest quality raw material produces such as Saudi Basic industries Corporation [SABIC] and Basel Holdings B.V. [SABIC] and all raw materials supplied are subjected to incoming quality control tests in Bright Water Laboratory.

PPRC Raw Material Resistance Curve



Environment Friendly Bright Water

Producing by the use of “Environmental Friendly Production Technologies” since its foundation, Bright Water proves its sensitivity toward environmental health through its Environmental Management System. Upon obtaining Germany (DAB) ISO 14001-2015 “Environment Management System”.

The environmentally friendly raw materials is used for manufacture of Bright Water PPRC Pipe system. to insure it's environmental compatibility, all contained additives (color pigments & stanilizers) are extensively tested, not only by Bright Water own laboratory, but also by prominent independent laboratories.

Bright Water not only retains its established environmental consciousness within its organization but also transforms this consciousness into an environmental policy and shares it with its neighbors, suppliers and customers. Especially during domestic and foreign seminars held for its end-users, Bright Water shares its efforts made toward environmental problems and importance that should be attached to the environmental health primarily with its business partners.

95% of the products of Bright Water consists of re-cycled re-processable materials. It sends its non-household wasted and non-recyclable waster products to “Disposal Facilities”.

Environment Management Programs and Projects oriented to Environmental Health Protection drawn up by the Environmental Group consisting of our environmental engineers are being realized within Bright Water Rubber & Plastic Manufacturing Company.

Committing its compliance with all national and international Environmental Legislative Directives and Environmental regulations, Bright Water fulfills all its legal liabilities and declares statutory assessment reports to the relevant Ministry.

Bright Water always gives precedence to the importance of environmental health and shows necessary sensitivity in all its investments.

General Information

Based on their advantages such as lightness and smoothness, luminous and slippy interior faces, calcification-free and stain-free nature, hygienic and easy-to-fit structure; Bright Water Pipes and Fittings produced from the raw material of PP-R (Polypropylene Random Copolymer) in compliance with TS 9937, TSEN ISO 15874, DIN 8077, DIN 8078, DVGW W544 standards superseded galvanized pipes and became an indispensable solution in today's interior building cold and hot water installations. Bright Water PPRC Pipes and Fittings used in all types of interior building cold and hot water installations are produced from Type-3 class of raw material defined as PP-R (Polypropylene Random Copolymer).

*Type-1 : PP-H (Polypropylene Homopolymer)

*Type-2 : PP-B (Polypropylene Blok Colymer)

*Type-3 : PP-R (Polypropylene Random Copolymer)

Raw material Type-3 has higher performance and superior qualities with respect to raw materials Type-1 and Type-2 from the points of physical and chemical characteristics.

The most important characteristic of this raw material is the high resistance against heat and chemical effects. Thanks to this resistance, Bright Water PPRC pipes and Fittings made of raw material of since monomer structure of the raw material PP-R forms a haphazard chain, it does not allow any biological material to settle inside its structure and thus, Bright Water PPRC Pipes and Fittings made of raw material PP-R acheive color, taste and smell-free superior qualities.

Bright Water PPRC Pipes and Fittings with aluminum foil are designed particularly for installations with water passage. Since aluminum foil used in Bright Water PPRC Pipes and Fittings five-fold reduces the thermo-expansion coefficient of pipe, it impedes heat-based expansion and sag. Additionally, it also restricts oxygen passage thanks to its non-porous surface. When used at appropriate pressure and temperature values, useful life of PPRC Pipes and Fittings is more than 50 years.



Specifications



Water Bearing Capacity of PPRC Pipes

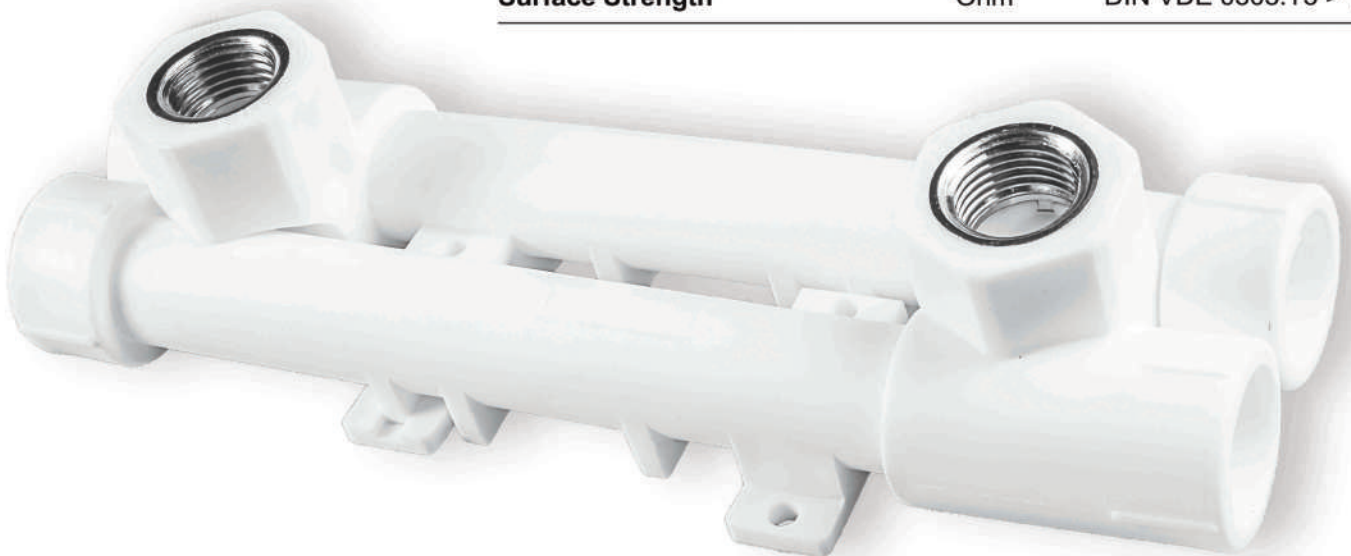
Movable quantity of water

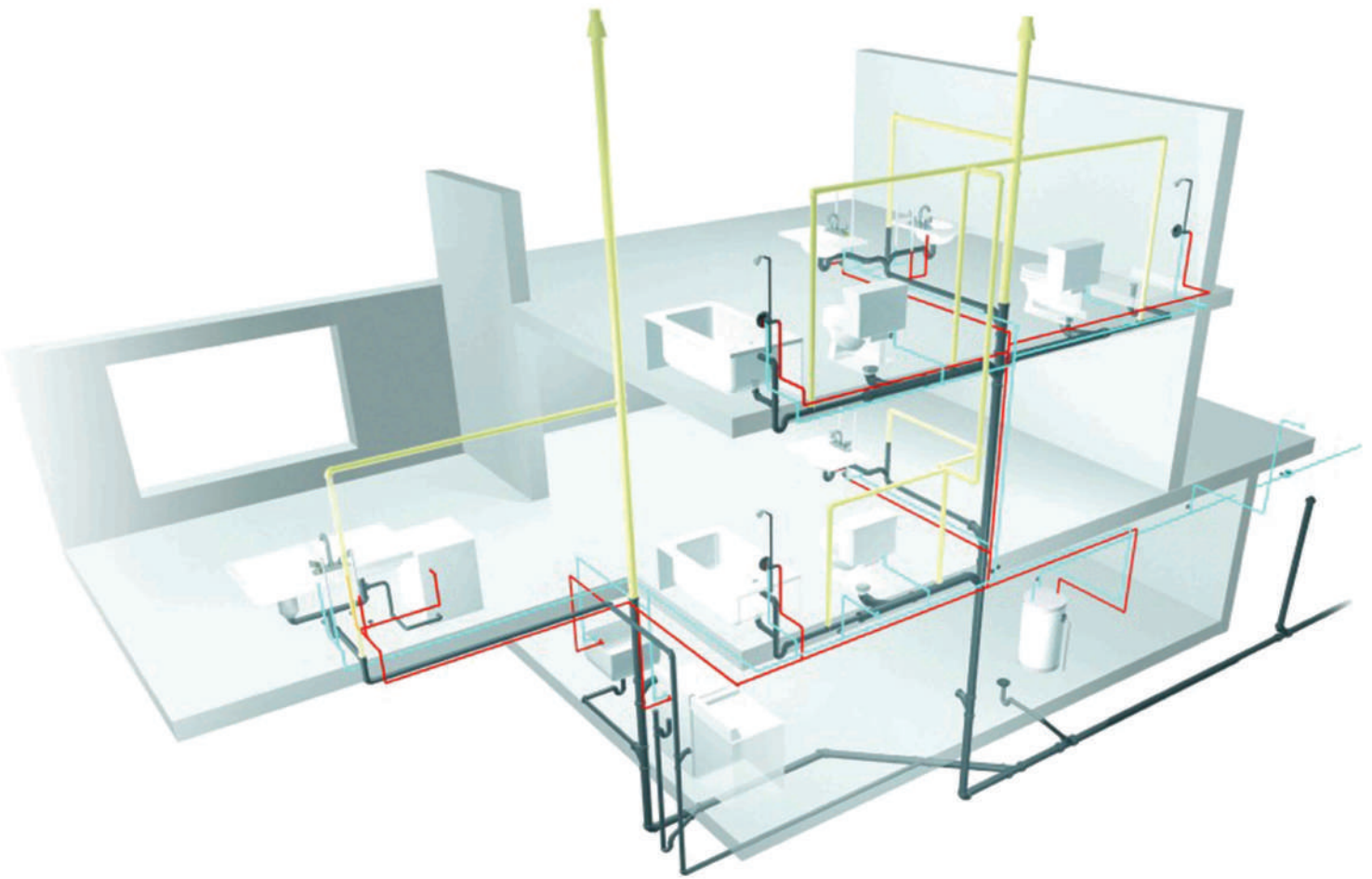
Pipe Diameter (Ø)	Amount of Water (lt/m)
20	0.137
25	0.216
32	0.353
40	0.556
50	0.876
63	1.385
75	1.963
90	2.827
110	4.231

(1m. inside)

Technical Characteristics of PPRC Pipes

Characteristics	Unit	Test Method	Value	
Density	+23°C g/cm	ISO 1183	0.909	
Melt Index	MFR 190/5	g/10 min	ISO 1133	0.55
	MFR 230/2.16	g/10 min	ISO 1133	0.30
	MFR 230/5	g/10 min	ISO 1133	1.20
Volume Flow Index	MVR 230/2.16	cm ³ /10 min	ISO 1133	0.4
Break-off Strength	(50 mm/min)	Mpa	ISO 527/1+2	25
Break-off Strain	(50 mm/min)	%	ISO 527/1+2	400
Shore D Toughness (3 sec value)			DIN 53505	65
Charpy Blow (Strength)	+23°C	kJ/m ²	ISO 179/1eU	
	0°C	kJ/m ²	ISO 179/1eU	
	-30°C	kJ/m ²	ISO 179/1eU	43
Charpy Milled Impact Strength	+23°C	kJ/m ²	ISO 179/1eA	52
	0°C	kJ/m ²	ISO 179/1eA	7
	-30°C	kJ/m ²	ISO 179/1eA	2.5
Vicat Softening Point	VST/A/50	°C	ISO 306	132
	VST/B/50	°C	ISO 306	69
Melting Range		°C	DSC	150-160
Linear Thermal Expansion Coefficient	1/K		DIN 53752	1.5*10 ⁻⁴
Thermal Conductivity		W/mK	DIN 52612	0.24
Surface Strength		Ohm	DIN VDE 0303.T3	> 10 ¹²





PPRC BOILER SET

Code	Packing Type		
8790000010	Standard Box		
Fitting Name	D (mm)	G (Inch)	Pieces
BALL VALVE	20		1
BALL VALVE	25		1
FILTER T	20	1/2"	1
FILTER T	25	3/4"	1
SOCKET WITH CAP NUT	20	1/2"	2
SOCKET WITH CAP NUT	25	3/4"	2



Service Lives of PPRC Pipes

Service Life (Year)	Operating Pressure (Bar)									
	10	20	30	40	50	60	70	80	95	
1	35.2	29.9	25.6	21.6	18.3	15.5	13.1	10.9	7.7	
5	33.1	28.3	24.0	20.3	17.1	14.4	12.0	9.6	5.2	
10	32.3	27.5	23.2	19.7	16.5	13.9	11.6	8.0	4.3	
25	31.2	26.7	22.4	18.9	16.0	13.3	9.9	6.4	-	
50	30.4	25.9	21.9	18.4	15.5	12.9	8.5	-	-	
100	29.6	25.1	-	-	-	-	-	-	-	
Temperature (°C)	10	20	30	40	50	60	70	80	95	

Service Live of PPRC Pipes

Service Live of PPRC Pipes Used in Water Installations

Temperature [°C]	Service Life [Year]	Operating Pressure [Bar]	
20	1	30.0	Cold Water
	5	28.1	
	10	27.3	
	25	26.5	
	30	25.7	
30	50	25.5	
	1	23.9	
	5	23.2	
	10	22.3	
	25	21.8	
40	30	21.5	
	50	20.2	
	1	19.6	
	5	18.8	
	10	18.3	
50	25	18.3	
	30	17.0	
	50	16.5	
	1	15.9	
	5	15.4	
65	10	15.4	
	25	14.3	
	30	13.8	
	50	13.3	
	1	12.7	
70	5	14.6	
	10	13.6	
	25	13.1	
	30	12.6	
	50	11.1	
70	1	13.0	
	5	11.9	
	10	11.7	
	25	10.1	
	30	8.8	
50	8.5		
			Hot Water

Service Live of PPRC Pipes in Heating Systems

Usage Period	Temperature (°C)	Service Life [Year]	Operating Pressure [Bar]
30 days/year	75	5	17.27
		10	13.79
		25	11.74
	80	45	10.18
		5	13.50
		10	13.80
		25	11.14
		42.5	9.79
		5	12.42
	85	10	11.87
		25	10.14
		37.5	9.1
90	5	11.39	
	10	10.94	
	25	8.86	
	35	8.16	
	5	14.11	
60 days/year	75	10	13.57
		25	11.58
		45	10.05
	5	13.12	
	80	10	12.54
		25	10.56
40		9.41	
90 days/year	85	5	12.03
		10	11.52
		25	9.22
	90	35	8.48
		5	11.04
		10	9.76
90 days/year	75	25	7.81
		30	7.46
		5	14.02
	80	10	13.38
		25	11.33
		45	9.82
90 days/year	85	5	12.90
		10	12.35
		25	10.05
	90	37.5	9.08
		5	11.81
		10	10.72
90	25	8.58	
	32.5	8.03	
	5	10.59	
90	10	8.96	
	25	7.17	

Welding Process

- 1) Cut the pipe perpendicular to the pipe axis by special pipe cutter.
- 2) Heat the welding machine up to 260 degree C and clean welding sockets while welding process
- 3) Push the pipe and fitting into welding sockets at the same time, do not rotate them, Please see welding and cooling information in the table below.
- 4) Connect immediatly together pipe and fitting removed from the welding socket, do not rotate them, do not perform any process on welding parts whose cooling periods are not over yet.
- 5) Pipe and fitting are now united and became single material.



Welding Specifications for PPRC Pipes

Outer Diameter (mm)	Welding Depth (mm)	Heating Period (sec)*	Welding Period (sec)	Cooling Period (minute)
20	14	5	4	2
25	15	7	4	2
32	17	8	6	4
40	18	12	6	4
50	20	12	6	4
63	26	24	8	6
75	29	30	8	6
90	32	40	8	6
110	35	50	10	8
125	46	60	10	8
160	58	75	10	10

WHAT MAKES US DIFFERENT





P P P C
PIPE & FITTINGS

**We
Don't
Deliver
A
Product.
We
Deliver
An
Experience**

bw
Bright Water

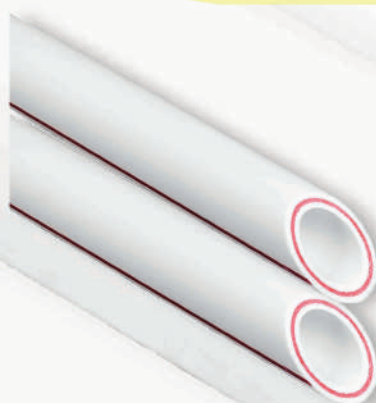


PPRC PIPE



CODE NO#	ØD(MM)	B(pcs)	d(mm)	S(mm)
1BR100020	20	100	20	1.9
1BR100025	25	80	25	2.3
1BR100032	32	40	32	2.9
1BR100040	40	32	40	3.7
1BR100050	50	20	50	4.6
1BR100063	63	16	63	5.8
1BR100075	75	12	75	6.8
1BR100090	90	8	90	8.2
1BR100011	110	4	110	10.0

PPRC COMPOSITE PIPE



CODE NO#	ØD(MM)	B(pcs)	d(mm)	S(mm)
1BR10020	20	100	20	2.8
1BR10025	25	80	25	3.5
1BR10032	32	40	32	4.4
1BR10040	40	32	40	5.5
1BR10050	50	20	50	6.9
1BR10063	63	16	63	8.6
1BR10075	75	12	75	10.3
1BR10090	90	8	90	12.3
1BR10011	110	4	110	15.1

SOCKET



CODE NO#	ØD(MM)	B(pcs)	d(mm)	L(mm)
7731000020	20	500	20	33
7711000025	25	300	25	37
7711000032	32	160	32	41
7711000040	40	100	40	49
7711000050	50	50	50	51
7711000063	63	30	63	63
7711000075	75	24	75	72
7711000090	90	16	90	82
7711000011	11	6	11	86

ELBOW 45*



CODE NO#	ØD(MM)	B(pcs)	d(mm)	L(mm)
7731000020	20	400	20	19
7711000025	25	250	25	21
7711000032	32	120	32	23
7711000040	40	80	40	29
7711000050	50	40	50	36
7711000063	63	20	63	43
7711000075	75	15	75	67
7711000090	90	10	90	87
7711000011	110	4	110	103



ELBOW 90*



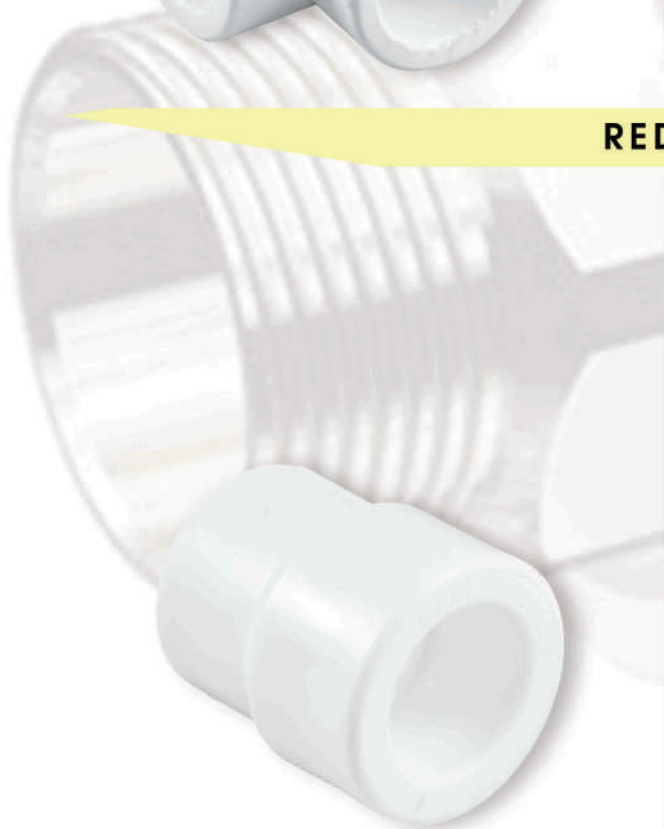
CODE NO#	ØD(MM)	B(pcs)	d(mm)	L(mm)
7731000020	20	400	20	25
7711000025	25	200	25	29
7711000032	32	120	32	36
7711000040	40	80	40	43
7711000050	50	40	50	47
7711000063	63	18	63	50
7711000075	75	12	75	65
7711000090	90	6	90	85
7711000011	110	2	110	93

TEE



CODE NO#	ØD(MM)	B(pcs)	d(mm)	L(mm)
7731000020	20	250	20	26
7711000025	25	150	25	30
7711000032	32	75	32	37
7711000040	40	40	40	43
7711000050	50	25	50	50
7711000063	63	16	63	60
7711000075	75	10	75	70
7711000090	90	5	90	76
7711000011	110	2	110	96

REDUCER



CODE NO#	ØD(MM)	B(pcs)	d(mm)	d(mm)	L(mm)
1RD202520	25x20	600	25	20	36
1RD203220	32x20	400	32	20	43
1RD203225	32x25	400	32	25	43
1RD204020	40x20	200	40	20	49
1RD204025	40x25	160	40	25	49
1RD204032	40x32	100	40	32	49
1RD205020	50x20	100	50	20	50
1RD205025	50x25	100	50	25	47
1RD205032	50x32	100	50	32	51
1RD205040	50x40	500	50	40	53
1RD206320	63x20	500	63	20	60
1RD206325	63x25	50	63	25	56
1RD206332	63x32	50	63	32	58
1RD206340	63x40	50	63	40	59
1RD206350	63x50	50	63	50	62
1RD207540	75x40	40	75	40	60
1RD207550	75x50	40	75	50	60
1RD207563	75x63	30	75	63	85
1RD209050	90x50	20	90	50	80
1RD209063	90x63	20	90	63	80
1RD209075	90x75	16	90	75	80
1RD201163	110x63	16	110	63	82
1RD201175	110x75	16	110	75	96
1RD201190	110x90	16	110	90	98



CLOSING CAP



CODE NO#	ØD(MM)	B(pcs)	d(mm)	L(mm)
1KB2000020	20	600	20	25
1KB2000025	25	400	25	27
1KB2000032	32	250	32	33
1KB2000040	40	150	40	34
1KB2000050	50	80	50	37
1KB2000063	63	50	63	50
1KB2000075	75	25	75	58
1KB2000090	90	18	90	66
1KB2000011	110	9	110	79

THREADED CAP



CODE NO#	ØD(MM)	B(pcs)	d(mm)	R	L(mm)
1KT200020	1/2"	700	22	1/2"	21
1KT200025	3/4"	600	22	3/4"	29
1KT200032	1"	500	25	1"	27

Unequal Tee



CODE NO#	ØD(MM)	B(pcs)	D(mm)	d1(mm)	d2(mm)	L(mm)
1IN252020	25*20*20	200	25	20	20	31
1IN252025	25*20*25	180	25	20	25	31
1IN322020	32*20*20	200	32	20	20	35
1IN322025	32*20*25	150	32	20	25	35
1IN322032	25*20*32	100	32	20	32	35
1IN322520	32*25*20	100	32	25	20	35
1IN322525	32*25*25	100	32	25	25	35
1IN322532	32*25*32	100	32	25	32	33
1IN402040	40*20*40	60	40	20	40	33
1IN402540	40*25*40	60	40	25	40	33
1IN403240	40*32*40	50	50	32	40	33
1IN502050	50*20*50	30	50	20	50	45
1IN502550	50*25*50	30	50	20	50	45
1IN503250	50*32*50	30	50	32	50	45
1IN504050	50*40*50	20	50	40	50	45
1IN632063	63*20*63	20	63	20	63	53
1IN632563	63*25*63	20	63	25	63	53
1IN633263	63*32*63	20	63	32	63	53
1IN634063	63*40*63	20	63	40	63	53
1IN635063	63*50*63	16	63	50	63	53
1IN753275	75*32*75	16	75	32	75	69
1IN754075	75*40*75	16	75	40	75	69
1IN755075	75*50*75	10	75	50	75	69
1IN756375	75*63*75	10	75	63	75	70
1IN904090	90*40*90	10	90	40	90	79
1IN905090	90*50*90	10	90	50	90	79
1IN906390	90*63*90	4	90	63	90	79
1IN907590	90*75*90	4	90	75	90	80
1IN115011	110*50*110	4	110	50	110	93
1IN116311	110*63*110	4	110	63	110	94
1IN117511	110*75*110	2	110	75	110	94
1IN119011	110*90*110	2	110	90	110	94



Crossover with Socket - Long



CODE NO#	ØD(MM)	B(pcs)	d(mm)	L(mm)
1MK200020	20	120	20	157
1MK200025	25	75	25	193
1MK200032	32	40	32	215

CURVED ELBOW (Female)



CODE NO#	ØD(MM)	B(mm)	D(mm)	l(mm)	h(mm)
1CK200020	20	150	20	88	29
1CK200025	25	120	25	95	35
1CK200032	25	60	25	95	35

FEMALE NIPPLE



CODE NO#	ØD(MM)	B(pcs)	d(mm)	R	L(mm)
2RK201012	20*1/2	200	20	1/2*	38
2RK201034	20*3/4	100	20	3/4*	41
2RK201012	25*1/2	180	25	1/2*	39
2RK201034	25*3/4	120	25	3/4*	43
2RK201012	32*1/2	50	32	1/2*	40
2RK201034	32*3/4	80	32	3/4*	44
2RK201011	32*/1	80	32	1*	44

FEMALE NIPPLE Xhexagonal



CODE NO#	ØD(MM)	B(pcs)	d(mm)	R	L(mm)
2RK201040	40*1-1/4	40	40	1 1/4*	50
2RK201050	50*1-1/2	20	50	1 1/2*	48
2RK201063	63*2	12	63	2*	54
2RK201075	75*2-1/2	8	75	2 1/2*	
2RK201090	90*3	6	90	3*	
2RK201011	110*4	2	110	4*	



MALE NIPPLE



CODE NO#	ØD(MM)	B(pcs)	d(mm)	R	L(mm)
2RK201012	20*1/2"	150	20	1/2*	38
2RK201034	20*3/4"	100	50	3/4*	41
2RK201012	25*1/2"	150	63	1/2*	39
2RK201034	25*3/4"	120	75	2/4*	43
2RK201012	32*1/2"	50	90	1/2*	40
2RK201034	32*3/4"	60	110	3/4*	44
2RK201011	32*1"	50	32	1*	44

MALE NIPPLE Xexagonal



CODE NO#	ØD(MM)	B(pcs)	d(mm)	R	L(mm)
2RK201040	40*1-1/4	32	40	1 1/4*	49
2RK201050	50*1-1/2	20	50	1 1/2*	48
2RK201063	63*2	12	63	2*	54
2RK201075	75*2-1/2	6	75	2 1/2*	
2RK201090	90*3	4	90	3*	
2RK201011	110*4	2	110	4*	

FEMALE TEE



CODE NO#	ØD(MM)	B(pcs)	d(mm)	R	L(mm)
2TE321012	20*1/2"	120	20	1/2"	26
2TE321034	20*3/4"	75	20	3/4"	26
2TE321012	25*1/2"	75	25	1/2"	27
2TE321034	25*3/4"	75	25	3/4"	33
2TE321012	32*1/2"	40	32	1/2"	39
2TE321034	32*3/4"	40	32	3/4"	38
2TE321011	32*1"	30	32	1"	36

MALE TEE



CODE NO#	ØD(MM)	B(pcs)	d(mm)	R	L(mm)
2TE321012	20*1/2"	100	20	1/2"	26
2TE321034	20*3/4"	75	20	3/4"	26
2TE321012	25*1/2"	60	25	1/2"	27
2TE321034	25*3/4"	60	25	3/4"	33
2TE321012	32*1/2"	30	32	1/2"	39
2TE321034	32*3/4"	40	32	3/4"	38
2TE321011	32*1"	40	32	1"	36



FEMALE ELBOW



CODE NO#	ØD(MM)	B(pcs)	d(mm)	R	L(mm)
2DR321012	20*1/2"	150	20	1/2"	30
2DR321034	20*3/4"	100	20	3/4"	36
2DR321012	25*1/2"	100	25	1/2"	32
2DR321034	25*3/4"	80	25	3/4"	35
2DR321012	32*1/2"	30	32	1/2"	45
2DR321034	32*3/4"	30	32	3/4"	45
2DR321001	32*1"	45	32	1"	45

MALE ELBOW



CODE NO#	ØD(MM)	B(pcs)	d(mm)	R	L(mm)
2DR321012	20*1/2"	150	20	1/2"	30
2DR321034	20*3/4"	75	20	3/4"	35
2DR321012	25*1/2"	100	25	1/2"	32
2DR321034	25*3/4"	80	25	3/4"	35
2DR321012	32*1/2"	30	32	1/2"	42
2DR321034	32*3/4"	30	32	3/4"	42
2DR321001	32*1"	45	32	1"	42

FEMALE SINGLE BATTERY CONNECTION



CODE NO#	ØD(MM)	B(pcs)	d(mm)	R	L(mm)
2TB201012	20*1/2"	100	20	1/2"	31
2TB251012	25*1/2"	80	25	1/2"	33
2TB201034	25*3/4"	75	25	3/4"	34

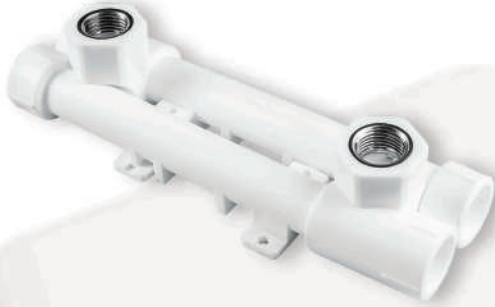
DOUBLE BATTERY Connection



CODE NO#	ØD(MM)	B(pcs)	d(mm)	R	L(mm)
2IB202012	20*1/2"	25	20	1/2"	150
2IB252012	25*1/2"	20	25	1/2"	150



Adjustable Double Battery Connection



CODE NO#	ØD(MM)	B(pcs)	d(mm)	R	L(mm)
21B202012	20*1/2"	15	20	1/2"	225
21B252012	25*1/2"	10	25	1/2"	225

Double Battery Lustration



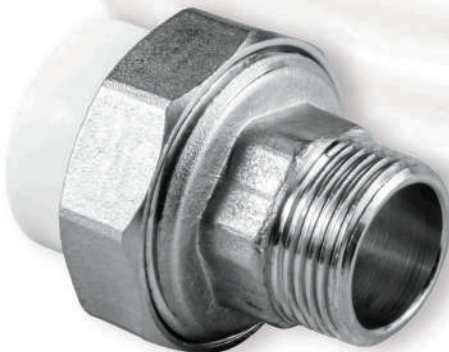
CODE NO#	ØD(MM)	B(pcs)	d(mm)	R	L(mm)
2A201012	20*1/2"	30	20	1/2"	90

FEMALE TRANSITION UNION



CODE NO#	ØD(MM)	B(pcs)	d(mm)	R	L(mm)
20R321012	20*1/2"	160	20	1/2"	36
20R321034	20*3/4"	120	20	3/4"	38
20R321012	25*1/2"	100	25	1/2"	36
20R321034	25*3/4"	80	25	3/4"	38
20R321002	25*1"	80	25	1"	42
20R321034	32*3/4"	70	32	3/4"	42
20R321001	32*1"	80	32	1"	42
20R321014	40*1-1/4"	40	40	1 1/4"	53
20R321012	50*1-1/2"	20	50	1 1/2"	57
20R321002	63*2"	10	63	2"	62

MALE TRANSITION UNION



CODE NO#	ØD(MM)	B(pcs)	d(mm)	R	L(mm)
20R321012	20*1/2"	160	20	1/2"	44
20R321034	20*3/4"	120	20	3/4"	47
20R321012	25*1/2"	100	25	1/2"	45
20R321034	25*3/4"	80	25	3/4"	49
20R321002	25*1"	80	25	1"	58
20R321034	32*3/4"	70	32	3/4"	51
20R321001	32*1"	80	32	1"	63
20R321014	40*1 1/4"	40	40	1 1/4"	58
20R321012	50*1 1/2"	20	50	1 1/2"	65
20R321002	63*2"	10	63	2"	98



FEMALE Y FILTER



CODE NO #	ØD(MM)	B(pcs)	d(mm)	L(mm)
2FI201020	20	90	20	78.4
2FI201025	25	60	25	83.4

MALE Y FILTER



CODE NO #	ØD(MM)	B(pcs)	d(mm)	L(mm)
2FI201020	20	75	20	78.4
2FI201025	25	50	25	83.4

BALL VALVE



CODE NO #	ØD(MM)	B(pcs)	d(mm)	L(mm)
2KV200020	20	100	20	74
2KV200025	25	70	25	83
2KV200032	32	45	32	99
2KV200040	40	10	40	111
2KV200050	50	6	50	118
2KV200063	63	4	63	114
2KV200075	75	5	75	162

VALVE



CODE NO #	ØD(MM)	B(pcs)	d(mm)	L(mm)
2KK200020	20	50	20	69
2KK200025	25	32	25	78
2KK200032	32	24	32	88



CHROME VALVE



CODE NO#	ØD(MM)	B(pcs)	d(mm)	L(mm)
2KG200020	20	30	20	69
2KG200025	25	25	25	78
2KG200032	32	16	32	88

LUX CHROME VALVE



CODE NO#	ØD(MM)	B(pcs)	d(mm)	L(mm)
2KL200020	20	30	20	69
2KL200025	25	25	25	78
2KL200032	32	16	32	88

TILD ELBOW



CODE NO#	ØD(MM)	d(mm)	l(mm)	Weightkg/pls
7731000020	20	13.9	16.9	0.024
7711000025	25	23	24	0.138

LONG PLUG



CODE NO#	ØD(MM)	d(mm)	l(mm)	G"	Weightkg/pls
7780020127	20	49.5	49.5	1/2"	0.013



CROSSOVER With SOCKET - Short



CODE NO #	ØD(MM)	B(pcs)	d(mm)	L(mm)
1MK200020	20	150	20	88
1MK200025	25	120	25	95
1MK200032	32	60	25	95



Ø34.9
Ø24.5±0.4

CURVED BRIDGE



CODE NO #	ØD(MM)	l(mm)	Weightkg/pis
7700120020	20	280	0.048
7700120020	25	280	0.079
7700120020	32	310	0.138
7700120020	40	310	0.208

CHECK VALVE



CODE NO #	ØD(MM)	B(pcs)	d(mm)	L(mm)
1CV10012	20	100	20	70
1CV10025	25	60	25	70
1CV10032	32	40	32	70

CORNER T



CODE NO #	ØD(MM)	d(mm)	l(mm)	l(mm)	Weightkg/pis
7711003120	20	19.5	14.5	1/2"	0.022
7711003120	25	24.5	25.5	16"	0.040



RADIATOR VALVE (Straight)



CODE NO#	ØD(MM)	B(pcs)	d(mm)	R
1CV10012	20*1/2"	50	20	1/2"
1CV10034	25*3/4"	40	25	3/4"

RADIATOR VALVE (Corner)



CODE NO#	ØD(MM)	B(pcs)	d(mm)	L(mm)
2RV202012	20*1/2"	60	20	1/2"
2RV252034	25*3/4"	50	25	3/4"

NIPPLE With LOOSE NUT



CODE NO#	ØD(MM)	B(pcs)	d(mm)	R	L(mm)
2RV202012	20*1/2"	160	20	1/2"	29
2RV252034	25*3/4"	100	25	3/4"	33

Elbow with Nut



CODE NO#	ØD(MM)	B(pcs)	d(mm)	R	L(mm)
2HD200012	20*1/2"	150	20	1/2"	29
2HD200034	25*3/4"	100	25	3/4"	33



PIPE CLAMP



CODE NO#	ØD(MM)	B(pcs)	B	d(mm)	L(mm)
1TK200020	20	1000	6	20	69
1TK200025	25	900	6	25	78
1TK200032	32	625	6	32	88
1TK200032	40	400	6	32	88

PIPE CLAMP DOUBLE



CODE NO#	ØD(MM)	B(pcs)	B	d(mm)	L(mm)
1TK200020	20	625	6	20	61
1TK200025	25	400	5	25	70
1TK200032	32	200	6	32	87

PIPE CLAMP DOUBLE 2



CODE NO#	ØD(MM)	B(pcs)	B	d(mm)	L(mm)
1TK200020	20	1000	6	20	32
1TK200025	25	900	5	25	34
1TK200032	32	625	6	32	48

FUEL WEILDING SET



CODE NO#	B(pcs)
2190-00000	1



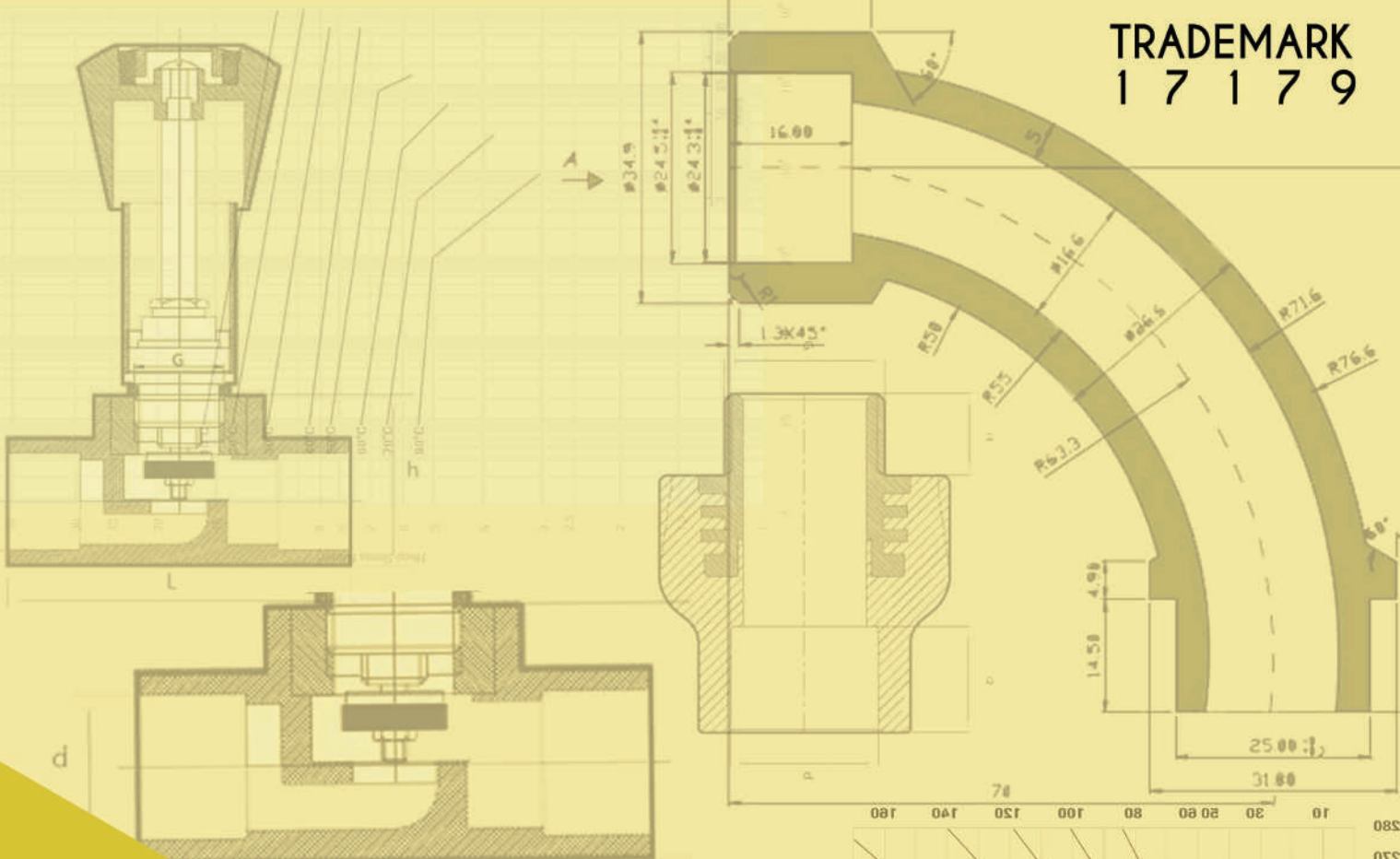
COMBI BOILER FITTING SET



CODE NO#	B(pcs)
2KS001008	36
2KS001010	36
2KS001008	36
2KS001010	36

CODE NO#	Product	B(size)	Package (m)
2FI202020	Filter 20mm	20*1/2"	1
2FI202025	Filter 25mm	25*3/4"	1
2KV200020	PPRC Ball Valve 20mm	20	1
2KV200025	PPRC Ball Valve 25mm	25	1
2HR200012	Nipple with Loose Nut 20mm	20*1/2"	2
2HR250034	Nipple with Loose Nut 25mm	25*3/4"	2

TRADEMARK
1 7 1 7 9



PPRC Pipe Clamp Spacings

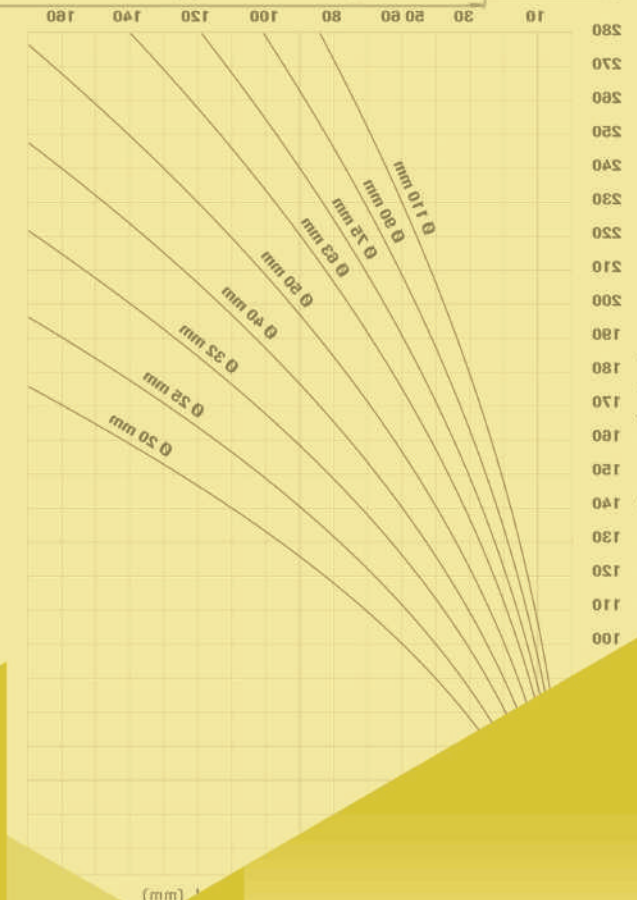
Temperature Difference Dt (°C)	Temperature Difference Dt (°C)									
	20	25	32	40	50	63	75	90	110	
105	125	140	165	190	205	220	250			
75	90	100	120	140	150	160	180			
90	100	120	140	150	160	180				
80	90	110	130	140	150	170				
70	80	90	110	130	140	150	170			
65	75	85	100	115	125	140	160			
50	60	75	80	95	105	115	125	140		

Clamp Spacings (cm)

PPRC Aluminum Foiled Pipe Clamp Spacings

Temperature Difference Dt (°C)	Temperature Difference Dt (°C)									
	20	25	32	40	50	63	75	90	110	
170	195	220			270	285	300	325		
150	160	180			210	220	230	250		
140	150	170			200	210	220	240		
130	140	160			190	200	210	230		
120	130	150			180	190	200	220		
110	120	140			170	180	190	210		
100	110	130			160	170	180	200		
90	100	120			150	160	170	190		
80	90	110			140	150	160	180		

Clamp Spacings (cm)



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