



Engineering progress  
Enhancing lives

## **RAUFUSION PP-R plumbing system**

Safer. Smarter. More convenient.





Polypropylene Random-Copolymer (PP-R) System with Homogeneous Jointing Technology for Plumbing Applications to DIN 8077/78 and ISO 15874.

# REHAU RAUFUSION PP-R plumbing system

REHAU being a global supplier of materials for the Automotive, Industry and Construction sectors understands what is required to get the job done today and for the future.

The RAUFUSION system has been engineered and manufactured according to the REHAU prestige quality standard guaranteeing the performance of the RAUFUSION system during installation, commissioning and long-term operation.

RAUFUSION has been rigorously tested according to all short and long-term requirements specified in the ISO 15874 and DIN 8077/78 international standards and of course REHAU's own stringent quality requirements.





**The perfect fusion  
of quality and functionality**



## Engineered for your safety

Safety is critical when choosing a suitable plumbing system. REHAU Raufusion consists of a wide array of safety features such as threaded fittings that ensure absolute security at the joints, and the best compounded polypropylene material chosen to prevent material degradation. In addition, the Raufusion system has gone through rigorous testing to meet both international and local standards.



### The REHAU Identity

Different pressure rated pipes are striped with distinct REHAU corporate colours to representing our distinct design, engineering and commitment to the products reliability and innovation.

## EASY IDENTIFICATION

The RAUFUSION piping system is clearly marked out with 3 distinct stripes, each representing a different PN rating. This allows for easy identification at the jobsite for both installation and inspection purposes.



**Pressure Rating:**  
PN10 / SDR 11 / S 5  
**Operating Pressure:**  
12.9 bars at 20°C  
**Operating Temperature:**  
5 - 70°C  
**Lifespan:**  
50 years  
**Appearance:**  
Light Grey with 4 Green stripes



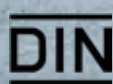
**Pressure Rating:**  
PN 20 / SDR 6 / S 2,5  
**Operating Pressure:**  
25.7 bars at 20°C  
**Operating Temperature:**  
5 - 70°C  
**Lifespan:**  
50 years  
**Appearance:**  
Light Grey with 4 Magenta stripes



**Pressure Rating:**  
PN16 / SDR 7,4 / S 3,2  
**Operating Pressure:**  
20.4 bars at 20°C  
**Operating Temperature:**  
5 - 70°C  
**Lifespan:**  
50 years  
**Appearance:**  
Light Grey with 4 Grey stripes



**Quality  
at your  
fingertips**



## **PRESTIGIOUS QUALITY STANDARDS**

Rigorously tested according to all short and long term requirements specified by ISO15874 and DIN8077/8078 while fulfilling REHAU's internal stringent lab tests and quality requirements.

# SAFER

## Engineered for you safety and well being

Safety is extremely crucial when choosing the right plumbing system. The RAUFUSION plumbing system is engineered for your well being. Raufusion consists of a wide array of safety features such as threaded fittings that ensure absolute security at the joints, the best compounded polypropylene material chosen to prevent material degradation. In addition, Raufusion system has gone through rigorous testing to meet international and internal standards.

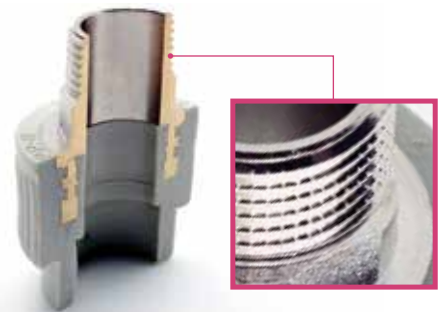


### HOMOGENEOUS JOINT - SOCKET FUSION

The result of the socket fusion process is a permanent homogeneous joint that requires no O-ring or solvent to seal and gives great pressure resistance. This is a unique safety feature through engineered design.

### RAUFUSION THREADED FITTINGS

The bond between PP-R material and metal threaded insert is critical for system security as significant forces can be present during the jointing to another materials. REHAU's RAUFUSION deep multi-point rib design is tested to resist the extreme torque during installation. In addition, the serrated thread ensures Teflon tapes are tightly bonded around the thread for maximum security.



### SUPERIOR RAW MATERIAL

Only compounded polypropylene (PP-R) material is used for pipe and fitting production. Compounded material includes highly effective stabilizers which prevent the material from degrading during production and operations.

# SMARTER

## Because we're thinking of you

Smarter and more intuitive. RAUFUSION is designed with you in mind. We've thought about how difficult it can be when it comes to plumbing, we've designed our plumbing system with smarter and more intelligent features that will make your plumbing experience a breeze.



### COLOURED MARKINGS FOR IDENTIFICATION

The RAUFUSION piping system is clearly marked out in various colours. Magenta, Grey and Green are the primary colours of REHAU. A symbol of quality, innovation and service; recognisable throughout the world.

The distinct REHAU colours are represented in the RAUFUSION 3 pipes series, representing our distinct design, engineering and commitment to the products reliability and innovation.

### ALLOW SHALLOWER INSTALLATION

Often a water outlet is required in a location that does not allow for standard concealment depth. RAUFUSION shallow female elbow can solve your problem. It is designed with a shorter transaction elbow to connect to the concealed pipe.

It is the small things that can make a big difference.



### STOP VALVES WITH SMART LABEL PLATES

The distinct stop valve is designed with a large hand wheel shaped like the Rehau logo. The valve can easily be closed or opened at will, for preventing or regulating the flow of liquid.

Label plate on the stop valve clearly indicates red and blue prints on each side functioning as an visible indicator on the type of application used for the stop valve.

Flip to the red side for hot water and blue side for cold water. This can be done easily in just a few seconds.



Hot water

Cold water



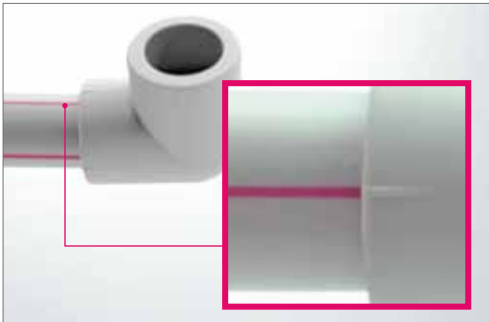
Turning  
with  
ease



# CONVENIENT

## Easier just for you

Convenience is the core of the RAUFUSION system. Aside from the unique features such as embossed joint and time markings, RAUFUSION is a complete PP-R system that comes equipped with a fusion tools that makes plumbing and fixing effortless.



### EMBOSSSED JOINT MARKINGS

Four (4) stripes located at 90° apart are not only designed just for product identification, but also for convenient installation.

The pipe's stripes and fitting's embossed marking lines allow easy and quick alignment during the installation to achieve the desired angle of the branched pipe or fitting.



### TIMING MARKS

We know that correct fusion time guarantees the quality of the joint.

With REHAU RAUFUSION, our installers are not required to memorize the fusion parameters to carry out the fusion process. It is simply because the Fusion (Heating) Times are printed in small intervals on the RAUFUSION pipes according to the respective heating requirements for each pipe's size.

The fusion time table can also be found in the each REHAU welding tool bag.

**Accurate  
timing**

REHAU's unique depth markers are also available to measurement of required insertion depth an ease.



### FUSION TOOLS

Durable tools with factory fixed welding temperature. Inclusive of vice clamp.

- Special heat-resistant canvas bag for immediate convenient storage
- Special coated welding bushes
- Durable for daily use

### RELIABLE TOOLS

With precise temperature to provide the best homogeneous joints!



**Fused  
with  
ease**



# Easy Installation

## 3 STEPS FOR SOCKET FUSION



1 Fusioning



2 Aligning



3 Jointing

Socket fusion is an easy way to making RAUFUSION joints. Both pipe and fitting are heated for a set length of time after which the heated socket and spigot is removed from the heating tool and the pipe is pushed into the fitting. Pipe and fitting are left for a predetermined time to cool and form a secured weld. Depending on the size of pipe, socket fusion welding can either be done by our handy RAUTOOL RF63, R125 tool kits or RAUTOOL RF125 station kit.

For more technical details, please refer to REHAU RAUFUSION Technical Information, which can be viewed/downloaded on [www.rehau.com.sg](http://www.rehau.com.sg).

## WELDING PARAMETERS

Pipe Diameter (mm)	Insertion depth (mm)	Heating time (sec)	Jointing time (sec)	Cooling time (sec)
20	14	5	4	120
25	16	6	4	180
32	18	8	6	240
40	20	12	6	240
50	23	18	6	300
63	26	25	8	360
75	28	30	8	480
90	31	40	10	480
110	33	50	10	480





**Designed to  
meet your  
requirements**

# TECHNICAL SPECIFICATION

## PIPES DIMENSION TABLE

Outer pipe dimensions	PN 10 / SDR 11 / S 5		PN 20 / SDR 6 / S 2,5	
	e	ID	e	ID
mm	mm	mm	mm	mm
20	1,9	16,2	3,4	13,2
25	2,3	20,4	4,2	16,6
32	2,9	26,2	5,4	21,2
40	3,7	32,6	6,7	26,6
50	4,6	40,8	8,4	33,2
63	5,8	51,4	10,5	42,0
75	6,8	61,4	12,5	50,0
90	8,2	73,6	15,0	60,0
110	10	90,0	18,4	73,2


## PP-R MATERIAL CHARACTERISTICS


Properties	Test method	Unit	Values
Melt Index 230/2.16	ISO 1133	g/10min	0.25
Density	ISO 1183	g/cm <sup>3</sup>	0.9
Vicat Softening Temperature	ISO 306	°C	>130°C
Thermal conductivity (20°C)	DIN 52612	W/mK	0.24
Thermal Expansion Factor	Dilatometer	Mm/mK	0.15
Elongation	ASTM D 638	%	>400
Tensile Strength at Yield	ASTM D 638	MPa	26.5
Flexular Modulus	ASTM D 790	MPa	833


Technical Data of pipes (approximate value)

# RAUFUSION Product Range

## RAUFUSION Pipes


Description	Art. - No.	DN in mm
 Pipe PN10	312567-001	20 x 1,9
	312568-001	25 x 2,3
	312569-001	32 x 2,9
	312570-001	40 x 3,7
	312571-001	50 x 4,6
	312572-001	63 x 5,8
	312573-001	75 x 6,8
	312574-001	90 x 8,2
	312575-001	110 x 10,0


Description	Art. - No.	DN in mm
 Pipe PN20	312586-001	20 x 3,4
	312587-001	25 x 4,2
	312588-001	32 x 5,4
	312589-001	40 x 6,7
	312591-001	50 x 8,4
	312592-001	63 x 10,5
	312593-001	75 x 12,5
	312602-001	110 x 18,4


Description	Art. - No.	DN in mm
 Elbow 90°	312601-001	20
	312603-001	25
	312600-001	32
	312634-001	40
	312604-001	50
	312605-001	63
	312606-001	75
	312607-001	90
	312608-001	110

Description	Art. - No.	DN in mm
 Elbow 45°	312635-001	20
	312636-001	25
	312637-001	32
	312638-001	40
	312609-001	50
	312610-001	63

## RAUFUSION components

Description	Art. - No.	DN in mm
	312611-001	75
	312612-001	90
	312613-001	110

Description	Art. - No.	DN in mm
	312614-001	20
	312615-001	25
	312639-001	32
	312640-001	40
	312730-001	50
	312731-001	63
	312732-001	75
	312733-001	90
	312734-001	110

Description	Art. - No.	DN in mm
	312616-001	25-20-25
	312617-001	32-20-32
	312618-001	32-25-32
	312641-001	40-20-40
	312642-001	40-25-40
	312643-001	40-32-40
	312645-001	50-20-50
	312646-001	50-25-50
	312735-001	50-32-50
	312736-001	50-40-50
	312647-001	63-20-63
	312737-001	63-25-63
	312738-001	63-32-63
	312739-001	63-40-63
	312740-001	63-50-63
	312741-001	75-32-75
	312742-001	75-63-75
	312743-001	90-32-90
	312745-001	90-63-90
	312746-001	110-63-110


## RAUFUSION components


Description	Art. - No.	DN in mm
	312619-001	25-20
	312648-001	32-20
	312620-001	32-25
	312649-001	40-20
	312650-001	40-25
	312747-001	40-32
	312748-001	50-20
	312749-001	50-25
	312750-001	50-32
	312751-001	50-40
	312752-001	63-20
	312753-001	63-25
	312754-001	63-32
	312755-001	63-40
	312756-001	63-50
	312757-001	75-63
	312758-001	90-63
	312759-001	90-75
	312760-001	110-63
	312761-001	110-75
312762-001	110-90	


Description	Art. - No.	DN in mm
	312621-001	20
	312622-001	25
	312651-001	32
	312652-001	40
	312623-001	50
	312624-001	63
	312625-001	75
	312626-001	90
312627-001	110	



**RAUFUSION components**


Description	Art. - No.	DN in mm
 End Cap	312653-001	20
	312654-001	25
	312655-001	32
	312656-001	40
	312657-001	50
	312658-001	63


Description	Art. - No.	DN in mm
 Coupling - female thread	314633-001	20 - Rp 1/2"
	314634-001	20 - Rp 3/4"
	314635-001	25 - Rp 1/2"
	314636-001	25 - Rp 3/4"
	314637-001	32 - Rp 3/4"
	314638-001	32 - Rp 1"
	314639-001	40 - Rp 1 1/4"
	314640-001	50 - Rp 1 1/2"
	314641-001	63 - Rp 2"


Description	Art. - No.	DN in mm
 Coupling - male thread	314642-001	20 - R 1/2"
	314643-001	20 - R 3/4"
	314644-001	25 - R 1/2"
	314645-001	25 - R 3/4"
	314646-001	32 - R 3/4"
	314647-001	32 - R 1"
	314648-001	40 - R 1 1/4"
	314649-001	50 - R 1 1/2"
	314650-001	63 - R 2"


Description	Art. - No.	DN in mm
 Stop Valve	314671-001	20
	314672-001	25
	314673-001	32

**RAUFUSION components**

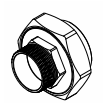
Description	Art. - No.	DN in mm
 Elbow - female thread	314652-001	20 - Rp 1/2"
	314653-001	20 - Rp 3/4"
	314654-001	25 - Rp 1/2"
	314655-001	25 - Rp 3/4"
	314656-001	32 - Rp 3/4"
	314657-001	32 - Rp 1"

Description	Art. - No.	DN in mm
 Elbow - male thread	314658-001	20 - R 1/2"
	314659-001	20 - R 3/4"
	314660-001	25 - R 1/2"
	314661-001	25 - R 3/4"
	314662-001	32 - R 3/4"
	314663-001	32 - R 1"


Description	Art. - No.	DN in mm
 Wall-mounted Elbow - female thread	314651-001	20 - Rp 1/2"


Description	Art. - No.	DN in mm
 Tee - female thread	314664-001	20 - Rp 1/2"-20
	314665-001	25 - Rp 1/2"-25
	314666-001	25 - Rp 3/4"-25
	314667-001	32 - Rp 3/4"-32
	314668-001	32 - Rp 1"-32

Description	Art. - No.	DN in mm
 Tee - male thread	314669-001	20 - R 1/2"-20
	314670-001	25 - R 1/2"-25

Description	Art. - No.	DN in mm
 Adaptor Union - male thread	314675-001	20 - R 1/2"
	314676-001	25 - R 3/4"
	314677-001	32 - R 1"
	314678-001	40 - R 1 1/4"
	314679-001	50 - R 1 1/2"
	314680-001	63 - R 2"

**RAUFUSION components**



Description	Art. - No.	DN in mm
 Adaptor union female	314681-001	20 - Rp 1/2"
	314682-001	25 - Rp 3/4"
	314683-001	32 - Rp 1"
	314684-001	40 - Rp 1 1/4"
	314685-001	50 - Rp 1 1/2"
	314686-001	63 - Rp 2"


Description	Art. - No.	DN in mm
 Flange Adaptor	312709-001	63
	312710-001	75
	312711-001	90
	312724-001	110

Description	Art. - No.	DN in mm
 REHAU PPR-PEX Adaptor	312725-001	20-16
	312726-001	20-20
	312727-001	25-25
	312728-001	32-32
	312729-001	40-40

Description	Art. - No.	DN in mm
 Short Bypass Bend	314050-001	20
	314060-001	25
	314070-001	32

**RAUFUSION tools**

Description	Art. - No.
 Hole repair pin	217919-001
 Heating bush	316340-001

Description	Art. - No.	DN in mm
 RAUTOOL Station Kit	323868-001	63-110

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The use of REHAU products in conditions that are beyond our control or for applications other than those specified releases us from any obligation in regard to claims made in respect of the products.

We recommend that the suitability of any REHAU product for the intended application should be checked. Utilisation and processing of our products are beyond our control and are therefore exclusively your responsibility. In the event that a liability is nevertheless considered, any compensation will be limited to the value of the goods supplied by us and used by you.

Our warranty assumes consistent quality of our products in accordance with our specification and in accordance with our general conditions of sale.

#### **REHAU Branches in Asia Pacific :**

##### **SINGAPORE - Regional Office for Asia Pacific**

1 King George's Avenue, REHAU Building, Singapore 208557 Tel: +65 6392-6006 Fax: +65 6392-6116

**AUSTRALIA** National Customer Service Centre Tel: 1300 768 033 **GREATER CHINA** Beijing Tel: +86 10 6428-2956 Chengdu Tel: +86 28 8628-3218 Guangzhou Tel: +86 20 8776-0343 / 3646 Hong Kong Tel: +852 2898-7080 Qingdao Tel: +86 532 8667-8190 Shenyang Tel: +86 24 2287-5807 Shanghai Tel: +86 21 6355-1155 Taicang Tel: +86 512 5337-2888 Taipei Tel: +886 2 8780-3899 Xi'an Tel: +86 29 6859-7000 **INDIA** Bangalore Tel: +91 80 2222-0014 Mumbai Tel: +91 22 6148-5858 New Delhi Tel: +91 11 4848-5600 Pune Tel: + 91 21 3567-4301 / 4340 **INDONESIA** Jakarta Tel: +62 21 4587 1030 **JAPAN** Tokyo Tel: +81-3-3292-8337 **NEW ZEALAND** Auckland Tel: +64 9 2722-264 **PHILIPPINES** Manila Tel: +63 2 654-5120 **THAILAND** Bangkok Tel: +66 2763-5100 **VIETNAM** Ho Chi Minh City Tel: +84 8 3823-3030  
www.rehau.com

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