Türkoba Mah. Firat Plastik Cad. 23
Büyükçekmece 34537 İstanbul Türkiye

T 0090 (212) 866 41 41 | 866 42 42
444 9 378 (FRT) | 0 800 219 80 20 CUSTOMER SERVICES HOTLINE
F 0090 (212) 859 04 00 | 859 05 00
E firat@firat.com | info@firat.com

www.firat.com

FACEBOOK | TWITTER | LINKEDIN firatplastik

APRIL 2024

FIRAT

FITTINGS

ELBOW (45°)

SINGLE BRANCH (45°)

ELBOW (87°)

T-PIECE

S SIPHON

SILENT CLAMP VERTICAL WITH BOLT NUT

SILENT CLAMP HORIZONTAL WITH BOLT NUT

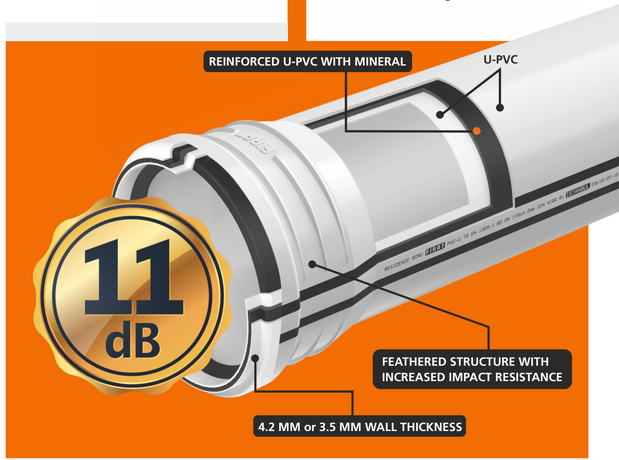
SILENT CLAMP ACOUSTICK

- PLUG
- SLIDING SOCKET
- T BRANCH
- CLEANOLT T-PIECE
- REDUCER
- S SIPHON
- REA AIR SOCKET LENGTHENING PIPE
- S SIPHONE WITH SOCKET

FUDEL ACCREDITED LABORATORY

The quality of plastic pipe systems used in infrastructure and superstructure investments is subject to international standards and compliances to these standards is a signi cant input in relation to the export capability of the Turkish industry. Systems, which are awarded quality approvals without performance of the required tests, cause the country's resources to be wasted due to incurrence of much higher costs. Turkey's lack of accredited test laboratories with high testing capacity, in which plastic pipe systems tests could be performed independently and impartially, was an important drawback for the country. Now, there is a major laboratory in the country which is accredited by TÜRKAK, the only public institution in Turkey with international validity, which will eliminate this drawback and enable the national resources to be used more ef ciently. FUDEL, which has the largest technological infrastructure in the country and the capability to deliver results to its customers in the shortest time possible, through an expert and competent staff, is the leading laboratory in the sector with a capacity for 22 different types of tests.

For your comfort more soundproof, for your safety it is fireproof.



RESIDENCE SOUNDPROOF RESIDENCE PIPES & FITTINGS

FIRATPIPE

GENERAL DESCRIPTION

Fluids passing through the pipes at different flow velocities result in vibrations by hitting the pipe sides and obstacles in the pipes which causes disturbing noises in buildings. The emerging modern developments in the construction sector expedite the housing delivery time. Construction firms need soundproof pipes in order to reduce additional labor and time costs regarding installations insulation.

USAGE AREAS OF SOUND-PROOF PIPES

Due to its characteristics of being ecological, economic and soundproof Residence Pipe and Fittings is a preferable choice to be used in villas and multi-floor residences, hospitals, schools, hotels and industrial or sportive structures, etc. These products ensure for the sewage from the foundation and interior structures of the building to be drained in an ideal and safe way without any leakage for a long term use (50 years).

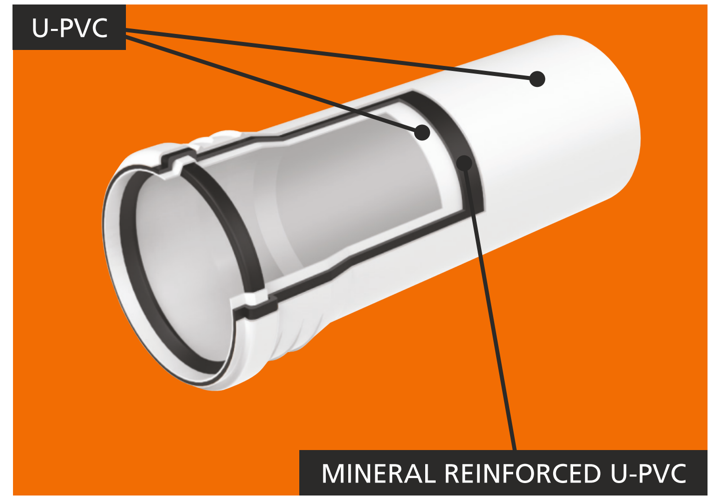
MATERIAL FEATURES

RESIDENCE PIPES AND FITTINGS are produced three-layered with a mixture of U-PVC and vinyl-copolimer (FRvinylflex) raw materials.

Inner Layer: Made of U-PVC having smooth inner surface

Middle layer: FRvinylflex® is a mineral-based additive developed in Frat R&D laboratories which provides Residence Pipes with soundproof features.

Outer Layer: Made of U-PVC protecting the pipes against external impacts



GASKET

The O-ring seals used in Residence Pipes and Fittings are made from EPDM and thanks to their unidirectional and special exterior shape they provide 100% leakproofing. Manufactured according to TS EN 681-1 standard.

APPEARANCE

→ Residence Pipes and Fittings are manufactured in gray color.

→ Reinforcing are added in order to reinforce impact resistance of the pipe muff structure.

PHYSICAL AND CHEMICAL PROPERTIES

Residence Pipes and Fittings meets the mechanical and chemical properties mentioned in TS EN 1329-1 standard.

Serial	Test	Test Method	Test period	Test Temperature	Required Performance
1	Impact Resistance	ISO 3127	-	0°C	Max. 10%
2	Vicat Softening Temperature	ISO 2507-1	-	-	Min. 79°C
3	Lengthwise Dimensional Change	EN ISO 2505	30 min.	150°C	Max. 5%
4	Resistance to Dichloromethane	ISO 9852	30 min.	15°C	Any break downs must not be observed.
5	Temperature Influence Test (Fitting)	EN ISO 580	30 min.	150°C	Any break downs must not be observed.
6	Leakage Test (0,5 bar) (System)	TS EN ISO 13254	15 min.	23°C	Any leakage must not be observed.

Residence Pipe Diameter And Wall Thicknesses 3.5 mm

Pipe Outer Diameter (mm)	50	75	110	125	160
Wall Thickness (mm)	3.0	3.0	3.5	3.6	4.3

Residence Pipe Diameter And Wall Thicknesses 4.2 mm

Pipe Outer Diameter (mm)	50	75	110	125	160	200
Wall Thickness (mm)	3.6	3.6	4.2	4.2	5.0	5.0

FIREPROOF PERFORMANCE CLASSES FOR THE BUILDING MATERIALS, OTHER THAN FLOORINGS

According to the EU Commision decision 2002/4390 the fire resistence classes of all construction materials, speciried accoroimo to the flamema bility classes ofthe comstructions materials, specified in the regulation on the protection of buldings from fires are as follows

Inflammability of the Material	Europe Classification (According to TS EN 13501-1)
Non Combustible	A1
Not Easily Combustible	A2 - s1, d0
	B,C - s1, d0
	A2 - s2, d0
Non-Flammable	A2, B, C - s3, d0
	A2, B,C - s1, d1
	A2, B,C - s1, d2
	A2, B, C – s3, d2
(minimum)	D - s1, d0
	D - s2, d0
	D - s3, d0
	E
Normal Flammable	D - s1, d2
	D - s2, d2
	D - s3, d2
(minimum)	E - d2
Easily Flammable	F

STANDARDS AND TEST REPORTS OF RESIDENCE PIPES AND FITTINGS

→ The products meet the mechanical and physical requirements of BD class of TS EN 1329-1 standards. BD application class; includes, The indoor surface-mounted applications, indoor under surface applications and the sewerage connections of the buildings.

→ Residence Pipes and Fittings are categorized as Non-Flammable according to "Turkish Building Fire Safety Regulations" in the scope of 2007/12937 decision of the Ministry of public works and settlement.

→ As a result of the fire response performance test carried out at UL, an independent US-based product safety certification agency, Residence Pipes and Fittings are categorized as V-0 NON-COMBUSTIBLE.

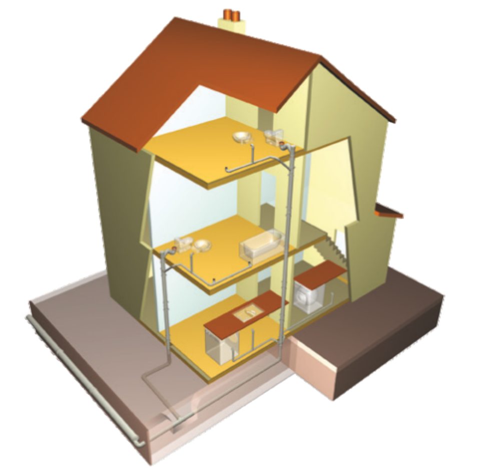
→ According to the INSPECTION AND TEST REPORT PREPARED BY TSI DIRECTORATE OF TESTING AND CALIBRATION LABORATORIES, the results from reaction to fire tests show that Residence Pipes and Fittings are categorized as B S2 D0 in the scope of TS EN 13501-1 +A1:2013-04 Fire Classification of Construction Products and Building Elements: classification using data from reaction to fire tests. Fire class B, Smoke generation S2, Flaming droplets D0.

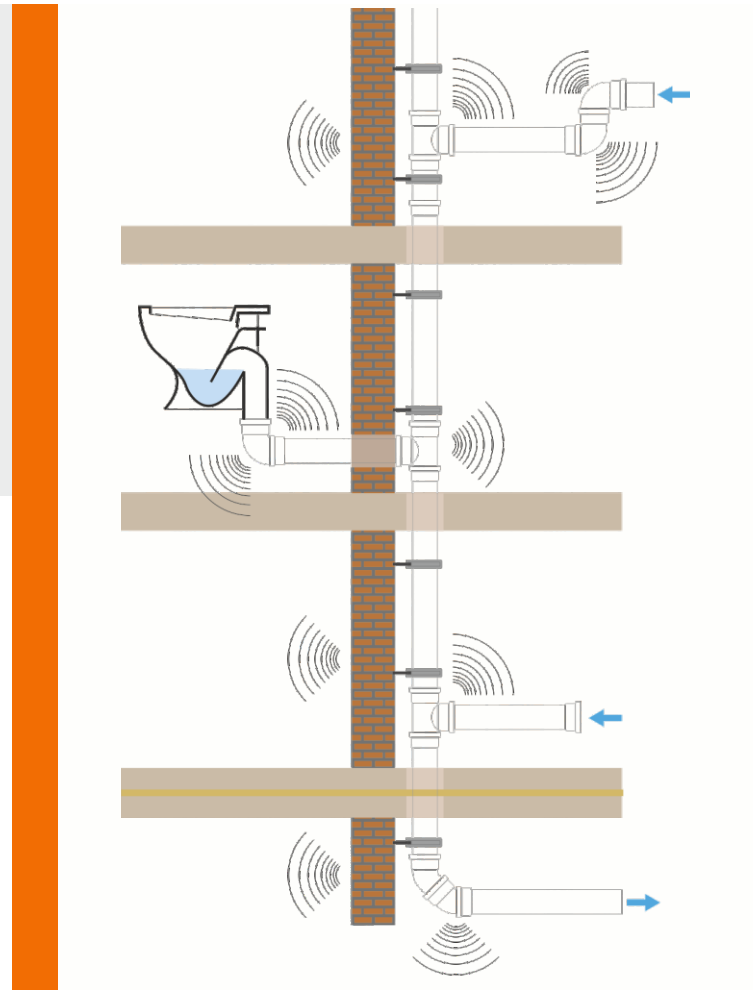
RESIDENCE PIPE AND FITTINGS ARE SOUNDPROOF

According to the results of the sound level measurement test, done at the Fraunhofer Institut Bauphysik (Germany) Residence Pipe and its fittings meet all national and international standard requirements.

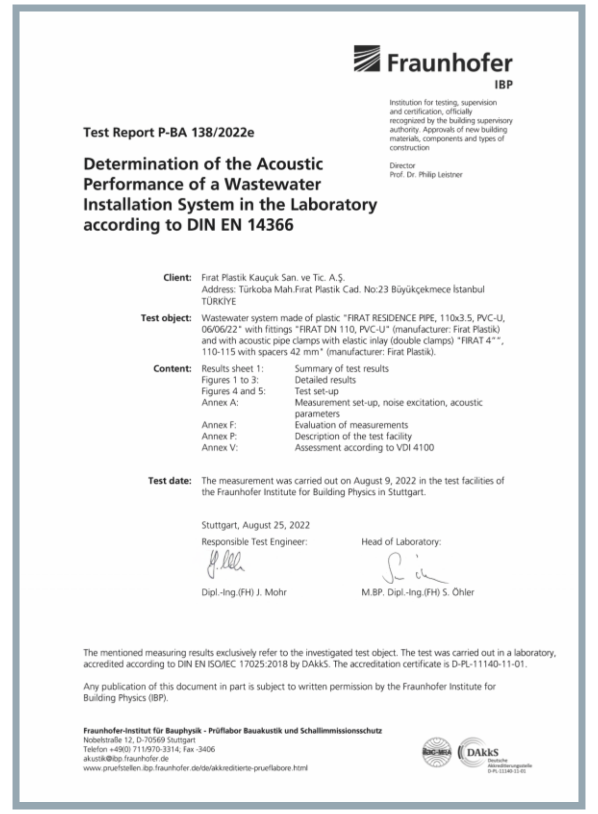
New Residence Silent Power Pipes and Fittings Test (Clamp System)

Flow Rate (liters per second)	0.5	1.0	2.0	4.0
Characteristic Sound Level - Decibels (dB(A)	<10	<10	<10	11





Features of Soundproof Residence Pipe Sewage Systems


Fraunhofer IBP

Institution for testing, supervision and certification, officially recognized by the building supervisory authority. Approvals of new building materials, components and types of construction

Director
Prof. Dr. Philip Leistner

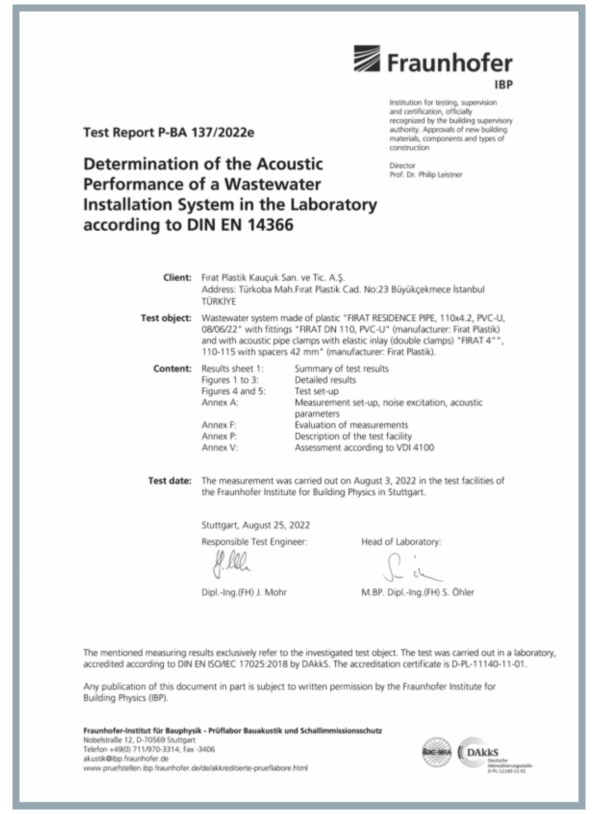
Test Report P-BA 138/2022e

Determination of the Acoustic Performance of a Wastewater Installation System in the Laboratory according to DIN EN 14366

Client: Fırat Plastik Kauçuk San. ve Tic. A.Ş.
Address: Türkoba Mah.Fırat Plastik Cad. No:23 Büyükçekmece İstanbul TÜRKİYE

Test object: Wastewater system made of plastic "FIRAT RESIDENCE PIPE, 110x3.5, PVC-U, 06/06/22" with fittings "FIRAT DN 110, PVC-U" (manufacturer: Firat Plastik) and with acoustic pipe clamps with elastic inlay (double clamps) "FIRAT 4"", 110-115 with spacers 42 mm" (manufacturer: Firat Plastik).

Content: Results sheet 1: Summary of test results
Figures 1 to 3: Detailed results


Fraunhofer IBP

Institution for testing, supervision and certification, officially recognized by the building supervisory authority. Approvals of new building materials, components and types of construction

Director
Prof. Dr. Philip Leistner

Test Report P-BA 137/2022e

Determination of the Acoustic Performance of a Wastewater Installation System in the Laboratory according to DIN EN 14366

Client: Fırat Plastik Kauçuk San. ve Tic. A.Ş.
Address: Türkoba Mah.Fırat Plastik Cad. No:23 Büyükçekmece İstanbul TÜRKİYE

Test object: Wastewater system made of plastic "FIRAT RESIDENCE PIPE, 110x4.2, PVC-U, 08/06/22" with fittings "FIRAT DN 110, PVC-U" (manufacturer: Firat Plastik) and with acoustic pipe clamps with elastic inlay (double clamps) "FIRAT 4"", 110-115 with spacers 42 mm" (manufacturer: Firat Plastik).

Content: Results sheet 1: Summary of test results
Figures 1 to 3: Detailed results

Fraunhofer
IBP