

Gas Pressure Regulating Stations



SEVEROČESKÁ ARMATURKA, a. s.
Ústí nad Labem

The Catalogue Structure

Introduction	3
Gas Regulating Stations	6
Small Farmer Regulating Station	6
Farmer Regulation Station	8
References	10
Types of Supplied Buildings	11
Certificates	25
Questionnaire	26
Contacts	27

Aim

The company's SEVEROČESKÁ ARMATURKA, a.s. main aim is understood as the opportunity to be long lasting and reliable partner for the customers, meeting their demands in the branches of water, gases and other fluids distribution and control. The company deals namely with industrial valves and connected products manufacturing and sales, taking into account advantage of both, the own long tradition and experience.

Selling assortment consists of

- Globe and Check Valves
- Flow Control and Pressure Reducing Valves
- Butterfly Valves
- Spring Loaded Safety Valves
- Heating Gas Distribution and Control Valves
- Various Special Valves
- Gas Pressure Reducing Stations, Heat Exchanging and Mixing Stations
- Cast and Ductile Iron Castings

The Customers requirements are the basic definition of all services and quality system, and the company strategy is based on that philosophy. The main aim of this quality system is to supply to the customer only the goods and services those are in accordance with the purpose of their usage, technical standards, other rules and customer requirements.

SEVEROČESKÁ ARMATURKA, a.s. company has introduced into operation the Certified System of quality control **ISO 9001** in the year 1994, that was granted by the certification body RW TÜF Essen and from the year 1998 it has got the **Lloyd`s Register** certification for castings, made of cast steel and cast iron.



Introduction

SEVEROČESKÁ ARMATURKA, a.s. has been traditional producer of Regulating Stations (RS) since 1969. Until now, there has been sold to our customers in Czech and Slovak Republic and abroad over 8000 pcs. of RS, which serves to our customers to their full satisfaction until now.

Gas regulating stations are a group of device and equipment for automatic regulation of inlet over-pressure, complying with the pre-set values.

Regulation stations produced are made completely in full correspondence with customers requirements, in accordance with the Czech standard ČSN EN 12186, regulating device according to the Czech standard ČSN EN 12279, regulating device for boiler house or other devices, including RS building parts.



Types of Regulation Stations

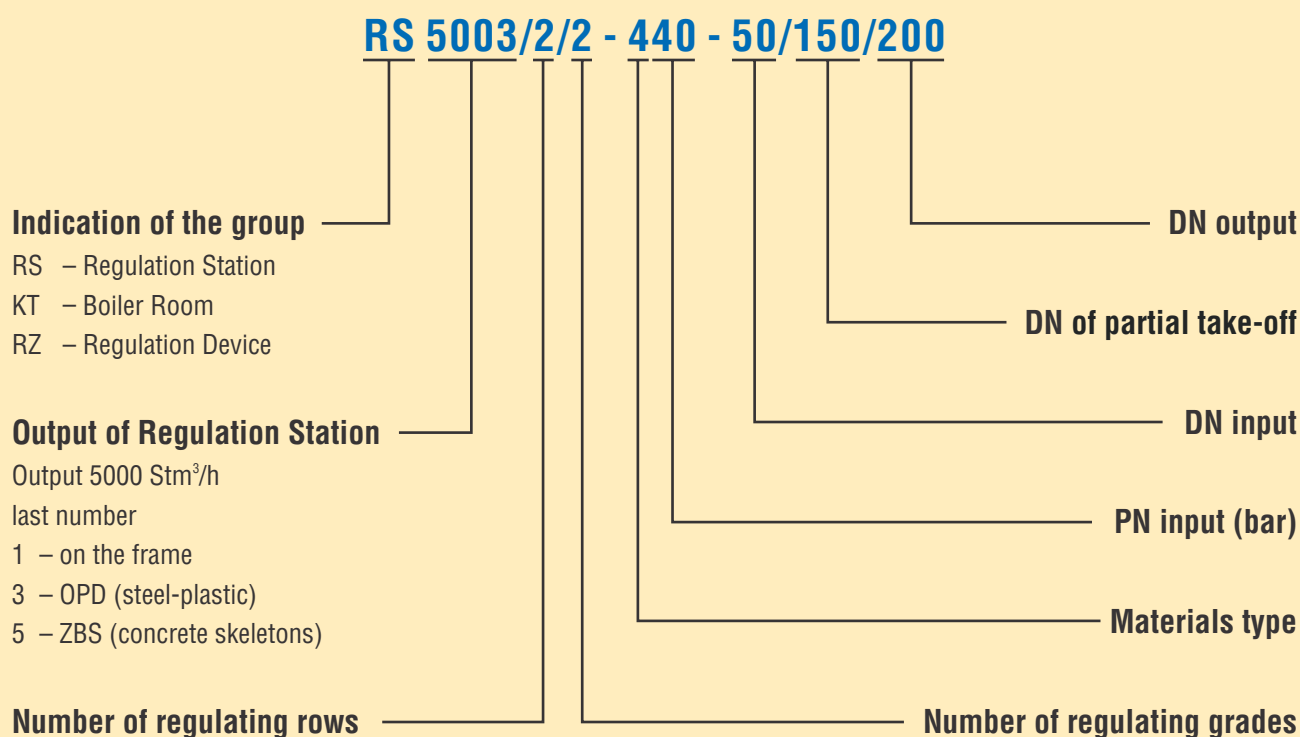
Pressure ranges

Type	Inlet Pressure	Pressure Range MPa	Outlet Pressure
RS vvtl	very high	4-10	high, middle, low
RS vtl	high	0,4-4	high, middle, low
RS stl	middle	0,005-0,4	middle, low

Output ranges

The regulation stations (RS) outputs that are in the company production assortment are in a range of 10 Stm³/h, so called Farm Regulating Station, intended for small number of families, to 50 000 Stm³/h, or more up to 100 000 Stm³/h or more. Stations with outputs up to 5 000 Stm³/h are usually fully assembled on the frame or together with a building. Stations of higher outputs are assembled on the construction site and all stations are usually supplied as turnkey deliveries.

Structure of RS Type Number



Preheating of Gas before Pressure Reduction

SČA supplies RS either without preheating, this concerns mainly middle pressure RS or RS with direct electric preheating or non-direct preheating by heat exchangers, water - gas and boiler houses itself, placed in a separate room or in a separate building.

Electric direct preheating is used for RS of lower output, up to preheating output 18 kW.

Preheating of gas is solved by means of gas-water heat exchangers. SČA, a.s. uses either normal or stainless steel heat exchangers, type MAX (max. output RS 10 000 Stm³/h) from our own production assortment, or according to the requirements of customer, we can use another from other producers. The way of preheating can be solved either as closed or open system.

Measurement, Data Remote Control and Transmission

RS are equipped (not necessarily) with various types of flow-meters, from rotating and turbine systems (GWF, ABB, Rombach, Elster, Premgas, Roots, Romet, Schlumberger), according to the requirements of the customer. They can be furnished with a register of data (Datcom) and with recounter (Elcor 94, Elster).

RS can be also equipped with telemetry system (distance transfer of data) type Adam 5510, Mini Adam or MiSy.

Gas Odorisation

According to requirements it is possible to equip RS with odorisation device.

Installed Valves

RS are set mainly with valves manufactured in SČA, a.s., it concerns regulators, quick-closing devices, high capacity filters, butterfly valves, safety valves etc. In case that customer prefers armatures from other producers, RS can be also furnished with (Tartarini, Pietro Fiorentini, RMG, Francel etc.)



RS and Gas Boiler Houses Reconstruction and Overbuilding

SČA is active also in reconstruction and overbuilding of older RS. This is assured from the project until the supply of RS technology, with regard to the new achievements in gas industry. This activity includes possible replacement of older buildings, Fe-Al or steel types.

Building of Boiler Houses and Heat Exchange Stations

SČA assures all these products from the projection up to the end construction works.

Services

SČA, a.s. provides many services, connected with the RS operation, maintenance and repairs. They are as follows:

- Warranty and post-warranty service of RS, by means of both, our own service centre or by contractual partners.
- New RS starting up
- 4 months periodical service, according to valid standards.
- Revision of gas equipment together with electro-revisions.
- Valves service and repairs.
- All these activities are supported with certificates, issued in acc. with the standards and customer wish.
- The company SČA, a.s. is furnished with all necessary certificates and qualification for all these activities, including quality certification ISO 9001.

Projection

SČA, a.s. has its own project capacities, which assures for our customers project documentation, needed for building or reconstruction of RS, gas boiler houses and heat exchange stations, including possible turnkey deliveries.

Delivery Terms

Deliveries of RS are normally realised within 4 - 6 weeks, after both, technical documentation clarification and purchase contract conclusion. The delivery can be speeded up after negotiation with the RS business department.

Guaranty Period

Ordinary guaranty period for RS manufactured in SČA, a.s. is 24 months, from the date of delivery. However this guaranty may be prolonged after mutual agreement.



Gas Regulation Station

SČA, a.s. produces, except ordinary RS of larger outputs, also one-row Farmer RS, produced in two outputs variants:

- small farmer RS for 3-5 households
- farmer RS for small industrial consumer

Small Farmer Pressure Regulatory Station

Usage

Farmer RS (small one, up to 30 Stm³/h) serves for gas supply of solitude (farms) situated close to distance line VTL or VVTL of natural gas and assures rough regulation of inlet pressure 1,5 to 4 MPa in variants:

- RS 13/1/1 440 25/25
- RS 11/1/1 440 25/25

and of inlet pressure 1,5 to 6,3 MPa in variants:

- RS 13/1/1 463 25/25
- RS 11/1/1 463 25/25

resulting in constant outlet gauge pressure 0,2 MPa . For final consumer´s pressure (NTL in extent from 1 to 5 kPa) it is necessary to add a home pressure regulator, integrated with gasmeter.

In case	PN 40	RS 13/1/1 – 440 – DN 25/25 with electric preheating
	PN 64	RS 13/1/1 – 463 – DN 25/25 with electric preheating
Without a case, on the frame	PN 40	RS 11/1/1 – 440 – DN 25/25 with electric preheating
	PN 64	RS 11/1/1 – 463 – DN 25/25 with electric preheating

Technology Equipment

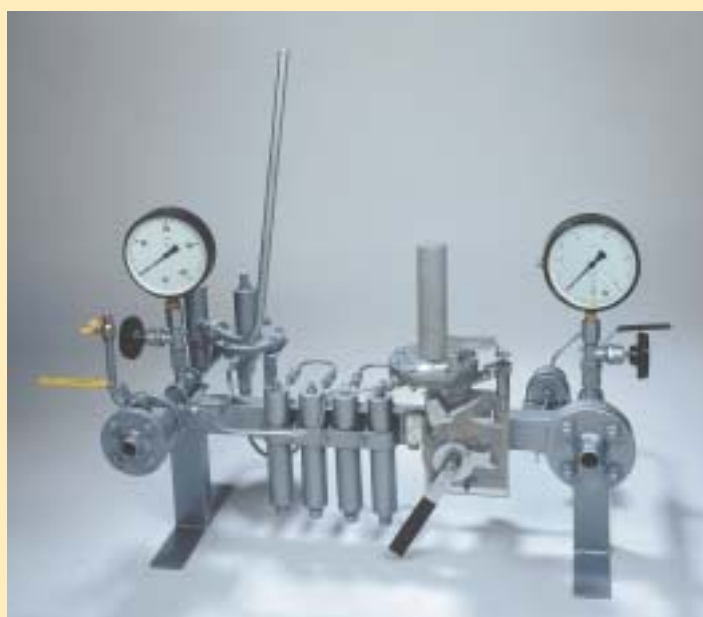
Technology equipment is build according to ČSN EN 12186. It is completed on a frame, which serves to ease the transportation and installation of the equipment.

Inlet piping piece with a pressure gauge, range from 0 to 6,3 MPa, dial diameter 100 mm is furnished with a ball valve, DN G1/4" (See scheme 1).

The dust filter (3) which is accessible after demontage of connecting pipe (first releasing the self-locking screw), is placed between inlet ball valve (1) and quick closing device (4). The cleaning of filtration insert is needed, when there is the sign of the RS lowering output, while the RS needed output is constant.

Quick closing valve (4) assures RS safe service, which closes always gas flow if the outlet pressure become lower or higher than set values.

The group of 4 preheaters Y 6111 (5) assures permanent gas preheating before pressure reduction, even when there is no gas consumption. This way of RS preheating lowers purchase cost, while an ordinary temperature regulation is expensive.



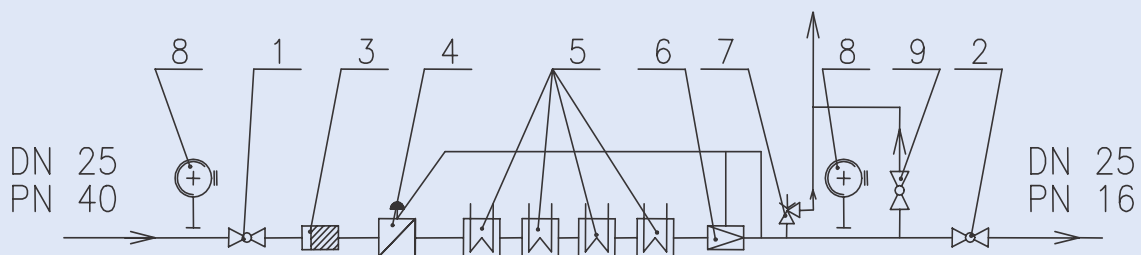
Preheated gas pressure is reduced in reducing valve (6) to the value of 0,2 MPa. The extra high accuracy of the set value is assured by the fact, that as large as possible reducing valve diaphragm active diameter is involved into a valve operation. The reduction valve design is derived from the successful conception of the pilot valve type C26 531 516 and takes advantage of the most parts of this kind, which are used for a control valve for a high pressure reducing valve type C26 525 540.

Outlet piping, which is equipped with welded on quick closing device (4)(ABR) and pressure reducing valve (6) impulse piping connecting pieces, is also equipped with safety valve (7), type P11 287 616 DN 15, which is set for the opening pressure higher than ABR switch off pressure and with pressure gauge, measuring extent from 0 to 0,4 MPa.

Air relief valve (9), DN G 1/4" with breather pipe, serves to RS setting. Outlet piping is ended by ball valve, K85 171 540 DN 25 (2).

GAS PRESSURE REDUCING STATION SCHEME

Type: RS 10/1/1 440 - 25/25



1	Ball Valve	G 1/4" PN4	9
2	Pressure Gauge		8
1	Safety Valve	P11 287 616 DN15	7
1	Pressure Reducing Valve	RT 257 763 DN6	6
4	Preheating	Y 6111.01	5
1	Quick Closing Device	BR1 057 463 DN6	4
1	Dust Filter	G 1/4" PN63	3
1	Ball Valve	K85 171 540 DN25	2
1	Ball Valve	G 1/4" PN70	1
Pcs.	Part Name	Type	Pos.

RS Coating and Installation

For coating, a steel metallic case is used, diameters 1100 x 780 mm and height 800 mm. The doors, diameters 860 x 650mm, are placed on both longer sides. Switchboard is situated on one and ventilating gap and safety valve output piping are situated on the other side.

The frame of the case is equipped with 4 anchor holes for connection with 2 stands (made of pipe diam. 108 mm), assembled to the RS on construction site, being then concreted so, that finally, the RS frame is 600 - 800 mm above the ground. The customer prepares soil shifting.

Farmer Regulation Station

Usage

As the gasification has been developing, the need of small farmer regulating station came into being. Small towns and solitudes is necessary to connect to main pipings, solving problems of gas pressure reduction from both, very high pressure to middle pressure (VTL-STL) and from very high pressure to low pressures (VTL-NTL). The main criterions of this station design were easy installation on the piping and the low, reasonable price, because it is not worth to solve the gas supplies, with a consumption up to 200 Stm³/h with ordinary RS.

In a case	PN 40	RS 205/1/1 – 440 – DN 25/50 Reinforced concrete case, steel doors, with electro gas preheater
	PN 40	RS 205/1/1 – 440 – DN 25/50 Reinforced concrete case, aluminium doors, with electro gas preheater
Without a case	PN 40	RS 201/1/1 – 440 – DN 25/50 with electro gas preheater

That is why manufacturer SČA, a.s. had developed the small consumption RS, with the output **up to 200 Stm³/h**, which is called Farmer Regulating Station, being designed fully in accordance with the standard ČSN EN 12186.

There are farmer RS types as follows:

From → to	RS type
VTL (4 – 10 MPa) – STL (0,005 – 0,4 MPa)	One stage
VTL (4 – 10 MPa) – NTL (less than 0,005 MPa)	Two stage design

Electric preheater of the gas assures preheating. All valves (with an exception of ball valves) are of Czech production. Measurement and registration devices are used according to the wish of the customer (the standard for registration devices is DATCOM). RS is manufactured so that the installation of telemetric device is possible.

RS is placed in ferroconcrete skeleton of smaller sizes. Its colour is selectable.

RS assures regulation from the inlet pressure 1,5 ÷ 4 MPa to constant outlet pressure value 0,3 MPa (possible choice from the range 0,2 ÷ 0,4 MPa).

Description of the equipment technology

Technology equipment is assembled according to ČSN EN 12186. It is built on the frame, which makes installation and transportation very easy.

The RS inlet is furnished with pressure gauge, extent 0-4 MPa, dial diameter 100 mm, equipped with ball valve G1/2" (1), see the RS scheme.

The dust filter (4) is placed in the lower part of the RS. Difference pressure gauge (13) is equipped with a slave hand indicating so maximal difference pressure during the whole day.

Preheating of gas before its reduction is assured by electric preheater (6). Preheating is simply controlled, keeping so constant natural gas outlet temperature.



Quick closing valve (5) assures RS safe operation, closing always in the case that outlet gas pressure gets over or under set values.

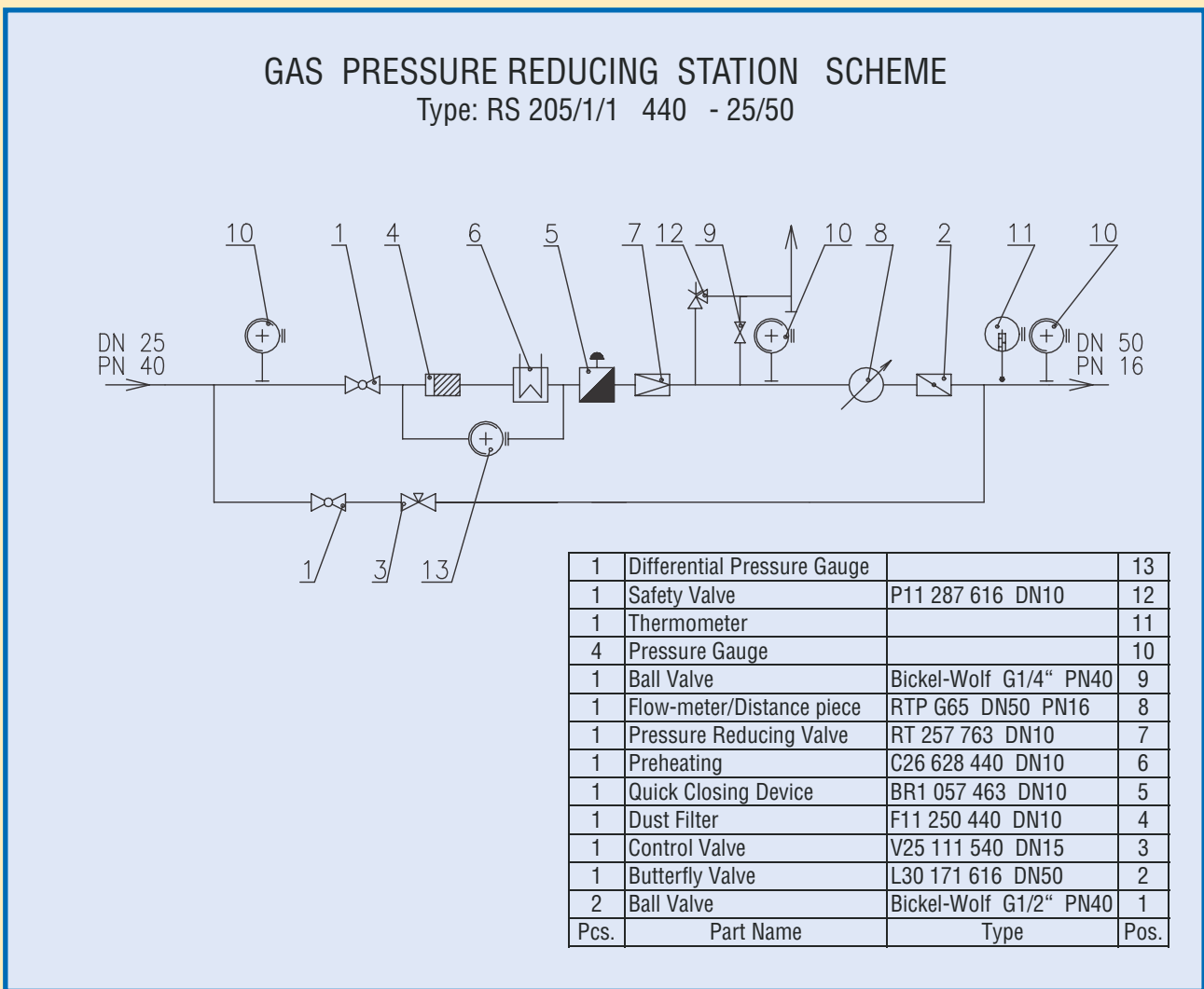
Preheated gas pressure is reduced in pressure reducing valve (7) to the value 0,3 MPa. (The value of the outlet pressure is possible to set within the interval 0,2-0,4MPa). Reduction valve is of direct acting and angle design.

The RS outlet is equipped with welded on, quick closing device (5)(ABR) and pressure reducing valve (7) impulse piping connecting pieces, together with safety valve (12), which is set for the opening pressure higher than ABR switch off pressure and with pressure gauge, measuring extent from 0 to 0,4 MPa, and bimetal thermometer. This RS outlet is possible to furnish with gas flow-meter.

Air relief valve (9) G 1/4" with breather pipe serves to both, quick closing device and pressure regulator setting. Outlet piping is ended by butterfly valve (2).

The former RS is furnished with the by-pass, consisting of ball valve (1) and hand operated control valve (3). This bypass serves in the case of emergency for possible manual regulation.

The registration of output gas pressure and temperature is carried out by means of electronic data device (DATCOM).



RS Case

For this purpose a reinforced concrete skeleton is used, diameters 1450 x 900 mm and height 1600 mm. (Edged roof). The front longer side is furnished with a 2-wings door. The switchboard is situated on a shorter side. On both shorter sides there are ventilation gaps.

Safety valve outlet piping is situated on the RS rear side.

The case is equipped with four base plates enabling its connection with the basement.

References - Examples

RS 203/2/1-440

OÚ Cekov, okr. Rokycany

RS with electric gas preheating,
in steell-plastic case



RS 505/2/1-440

OÚ Chroustovice, okr. Pardubice

RS with warm water-gas heat exchanger,
in reinforced concrete case



RS 40 000/2/1 - 440

Heating power station České Budějovice

(Turnkey construction)

RS with warm water-gas heat exchanger,
boiler room together in brick building



RS 15 000/2/1-463

Rochov, Litoměřice

(Turnkey construction)
area transmitting station

Survey of Supplied Buildings

SČA, a.s. supplies together with the RS technology also buildings, made of ferroconcrete, steelplastics or ordinary bricks, in accordance with the turnkey projects.

Ferroconcrete Buildings from the Company Betonbau



These ferroconcrete buildings are massive space cells made out of high quality concrete, where method of continual concrete casting is used, resulting in a reinforced monolith of walls and ground. This design has its advantage in construction stability of the whole body and in its long durability. There are no construction joints, which are disadvantage when the body is made of separate parts. More, this special way of production assures stiffness of the body during transport and manipulation.

Roofs

Another important part of the RS building is the roof. It is supplied either as an integrated part of the system BETONBAU, it means flat roof or shread head roof, light design made of heated zinc plated profiles, with the slats Bramac or another cover, in accordance with the customer wish, including spout system and protection against thunder storm.



Inner Disposition

Inner disposition is adjustable according to the customer wish. SČA, a.s. offers, in co-operation with Betonbau company many variants of buildings inner settlement for technology RS, in variants with separated boiler room (partition) or without partition.

Appearance of the BETONBAU Building

High quality of the design is commonplace. The surface of the concrete has water proof, synthetic resin bond plaster. It is possible to make choice from different colour shades (see Betonbau sampler of colours). Lower and roof plinth are usually of different colour. All steel parts, for example frame of the roof are heated zinc plated. It is possible to supply other variants of surface design; for example plaster made of rinsed concrete or another way of siding.

Doors

They are supplied according to the customer wish, either made of glass-fiber reinforced plastic (GFRP) or aluminium alloy, with the possibility of using safety locks, mainly for the boiler room.

Ventilation

Ventilation is dimensioned according to ČSN 386417 and can be solved in acc. with the customer requirement for the minimal noise level up to 43 dB.



Clearances

Inlet and outlet piping holes is possible to place anywhere in ground slab, basement, walls or roof and to seal them.

Dimensions

Dimensions of RS buildings are based on possible size assortment of the Betonbau company and SČA, a.s. offers 10 types of the buildings with partition, separating boiler room and 8 types without partition:

Type of the building with boiler room	Outer dimensions (l x w) in m		Inner dimensions of the boiler room	Inner height of the building	Number of gates	Diameters of gates wxh in m	Diameters of boiler doors room w x h in m	Total weight with flat roof
	A	B						
UF 2536p	3,58	2,50	0,480 x 2,255	3,200	2	2,0 x 2,1	0,9 x 2,1	15,5 t
UF 2542p	4,18	2,50	0,480 x 2,255	3,200	2	2,0 x 2,1	0,9 x 2,1	15,0 t
UF 3024p	2,38	2,98	0,480 x 2,135	3,200	2	2,0 x 2,1	0,9 x 2,1	15,3 t
UF 3054p	5,38	2,98	1,010 x 2,770	3,200	2	2,6 x 2,1	0,9 x 2,1	21,1 t
UF 3078p	7,78	2,98	1,600 x 2,780	3,200	2	2,6 x 2,1	0,9 x 2,1	31,0 t
UF 3542p	4,18	3,48	0,710 x 3,270	3,200	2	2,6 x 2,1	0,9 x 2,1	23,0 t
UF 3548p	4,78	3,48	1,010 x 3,270	3,200	2	2,6 x 2,1	0,9 x 2,1	26,0 t
UF 3554p	5,38	3,48	1,010 x 3,270	3,200	2	2,6 x 2,1	0,9 x 2,1	28,0 t
UF 3560p	5,98	3,48	1,010 x 3,270	3,200	2	2,6 x 2,1	0,9 x 2,1	33,0 t
UF 3566p	6,28	3,48	1,010 x 3,270	3,200	2	2,6 x 2,1	0,9 x 2,1	33,0 t

Type of the building without boiler room	Outer dimensions (l x w) in m		Inner height of the building	Number of gates	Dimensions w x h in m	Total weight with flat roof
	A	B				
UF 3024	2,38	2,98	3,200	2	2,0 x 2,1	9,5 t
UF 3060	5,98	2,98	3,200	2	2,6 x 2,1	21,8 t
UF 3066	6,58	2,98	3,200	2	2,6 x 2,1	23,5 t
UF 3072	7,18	2,98	3,200	2	2,6 x 2,1	29,4 t
UF 3078	7,78	2,98	3,200	2	2,6 x 2,1	31,0 t
UF 3542	4,18	3,48	3,200	2	2,6 x 2,1	21,0 t
UF 3548	4,78	3,48	3,200	2	2,6 x 2,1	23,0 t
UF 3554	5,38	3,48	3,200	2	2,6 x 2,1	25,5 t

Installation, Assembly, Technology RS

Another advantage of the RS buildings type Betonbau is the possibility to perform assembly of the RS technology both, directly at the SČA, a.s. premises, mainly ceiling parts, or at the building manufacturer.

Transportation, Installation, Service

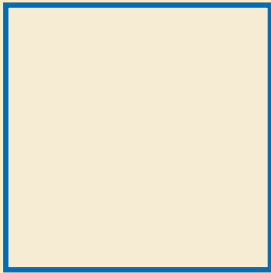
Transportation and installation of the RS is performed by own stuff, according to the negotiated time of delivery. The building is equipped with montage gaps for easy manipulation on the customer construction site.



Betonbau Buildings Colours

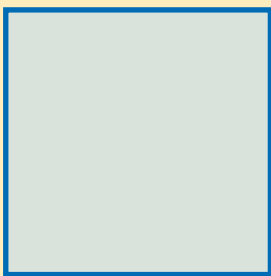


Standard colour/inner walls

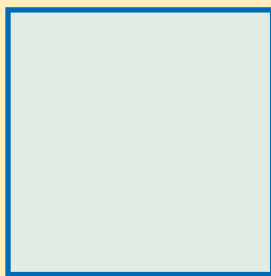


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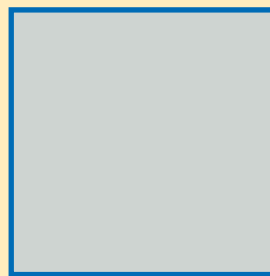
Standard colours/plaster



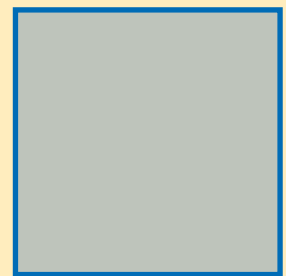
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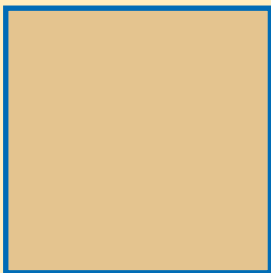
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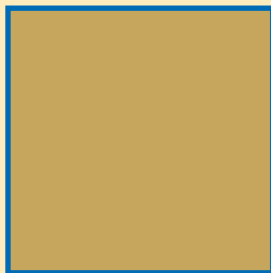
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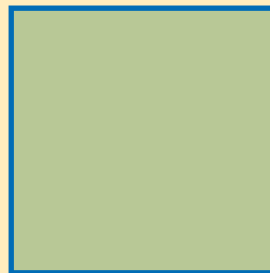
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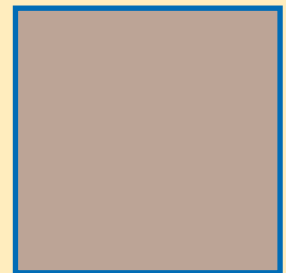
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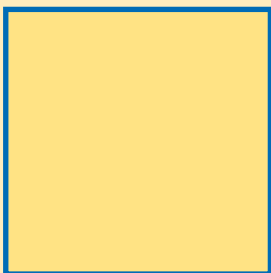


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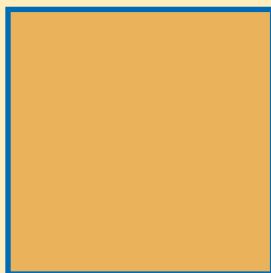


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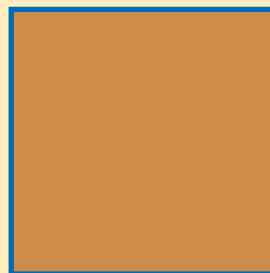
Special colours*/plaster



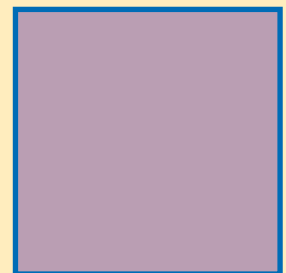
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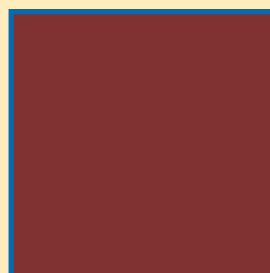
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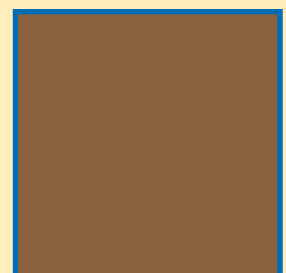
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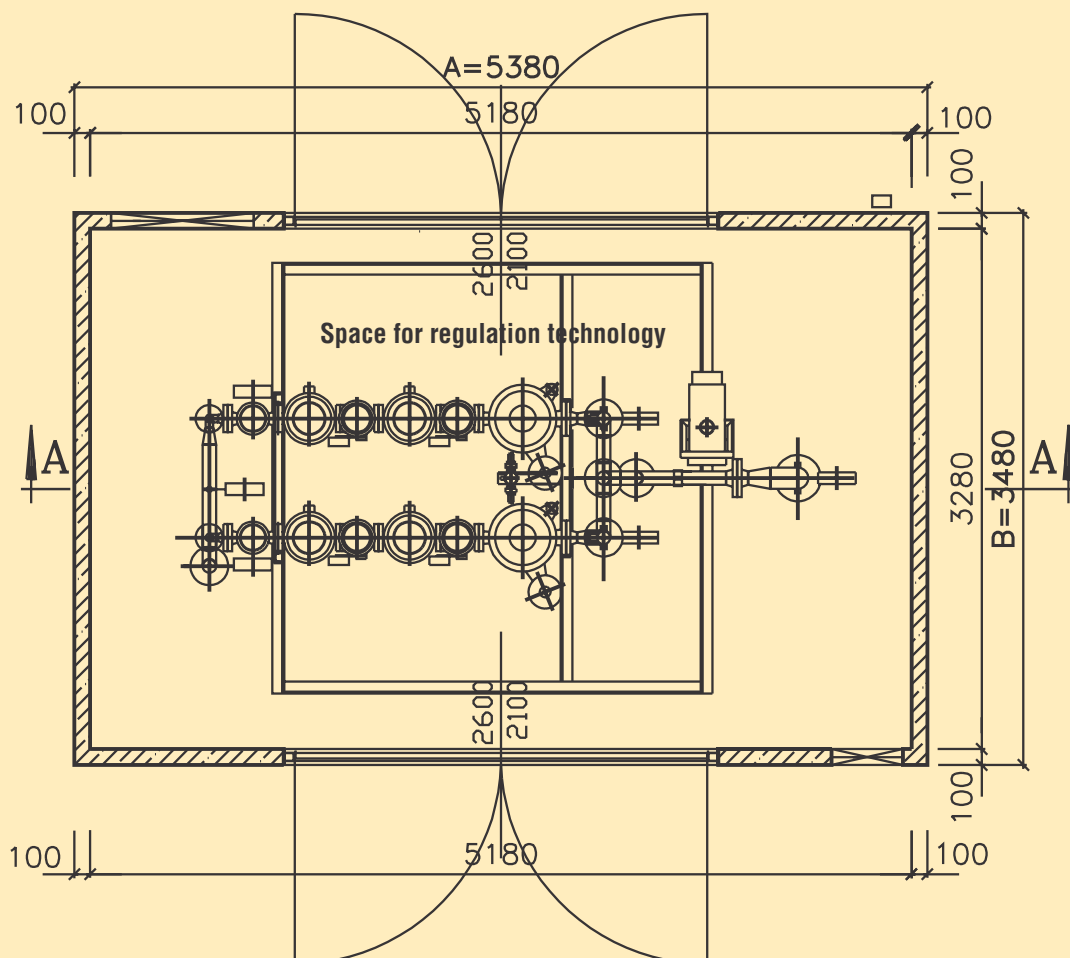
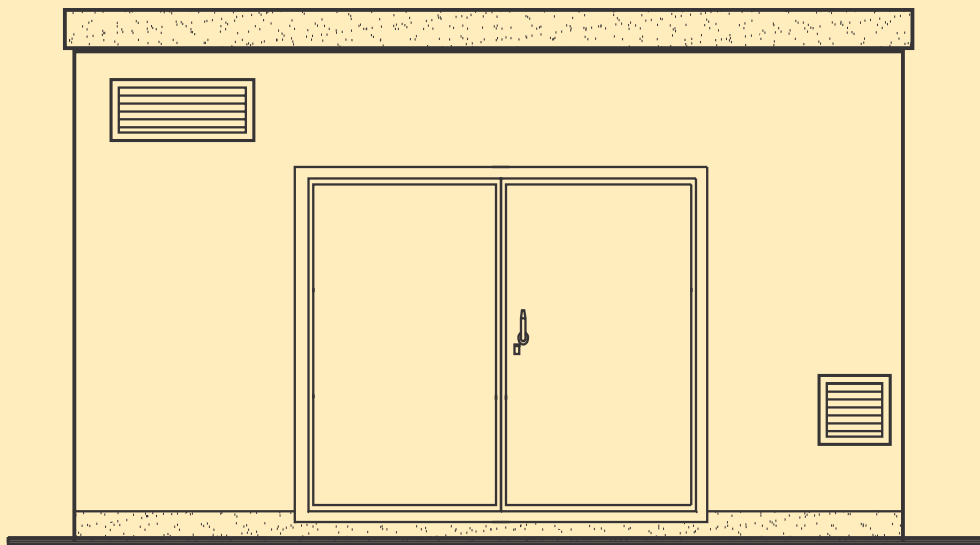


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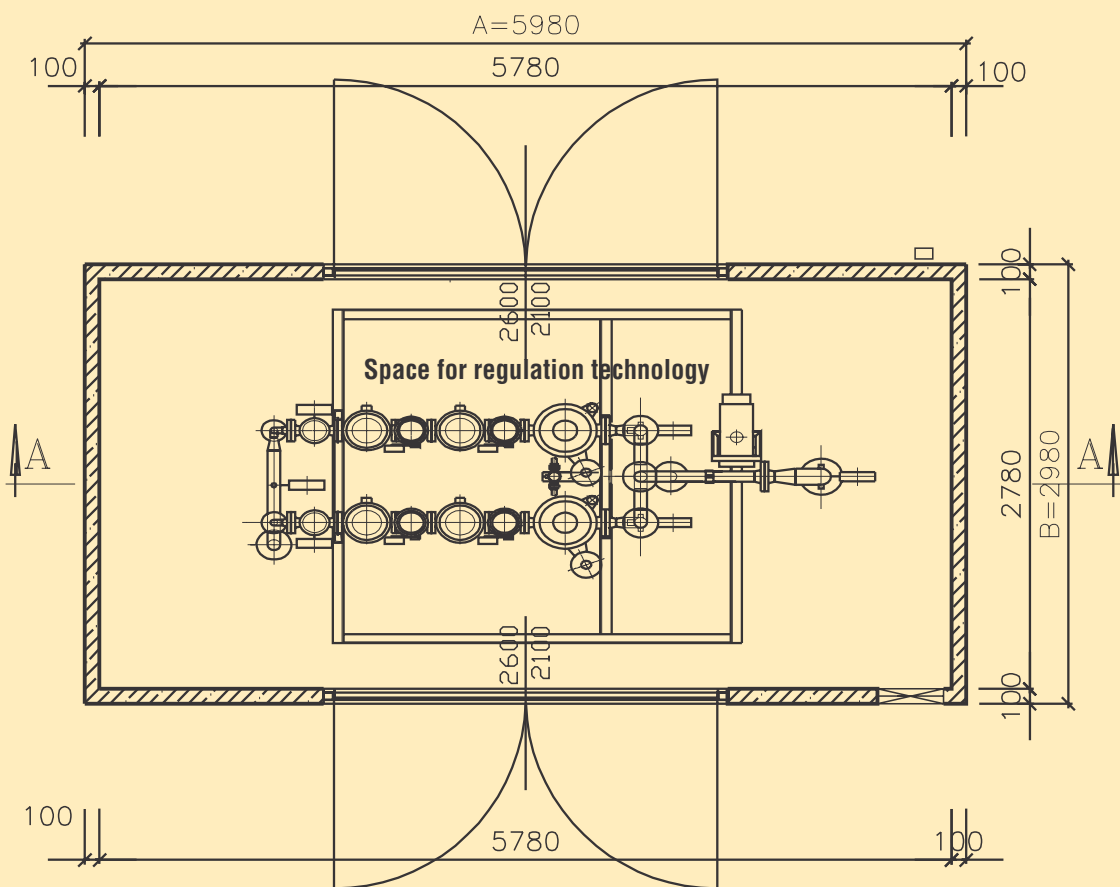
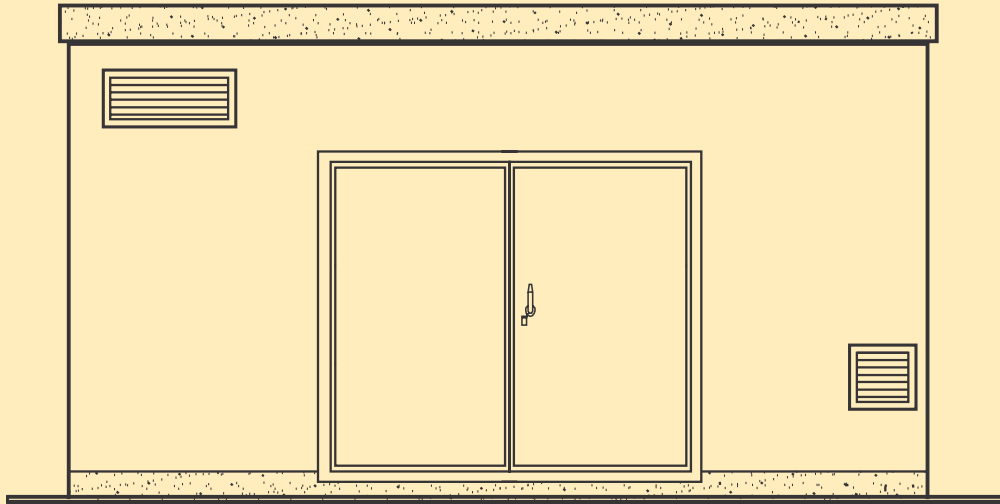
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Examples of the Disposition Solution

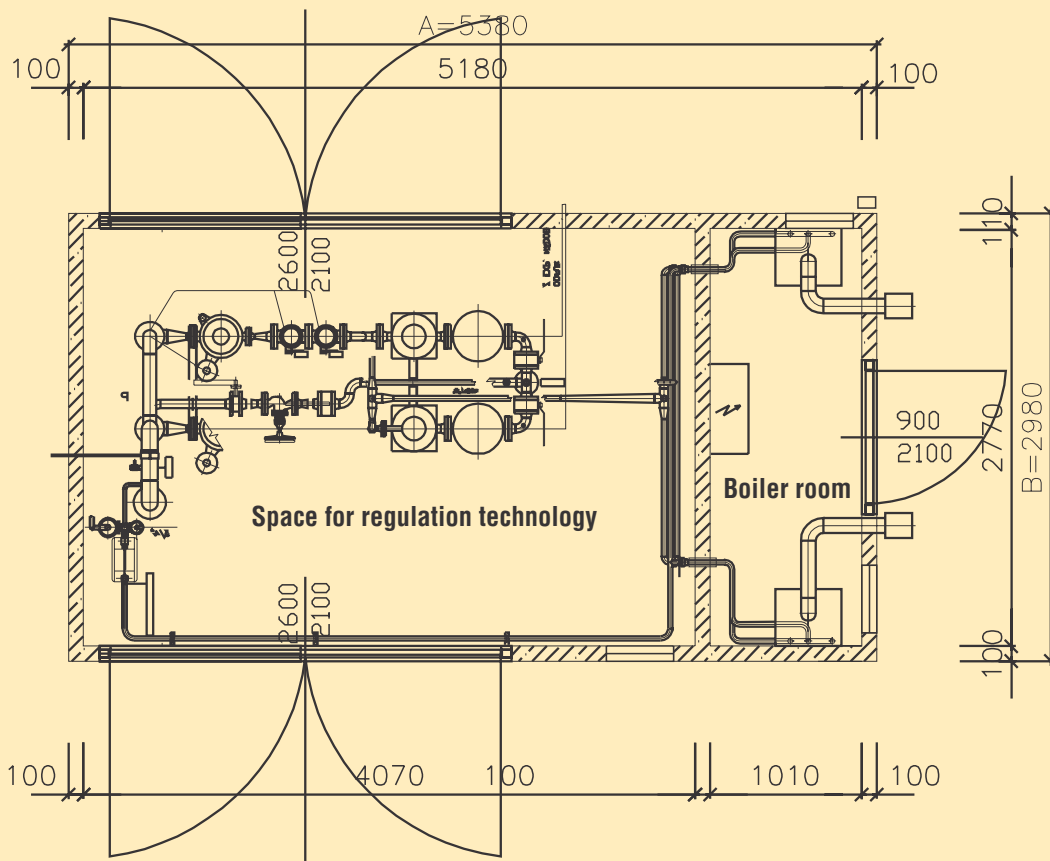
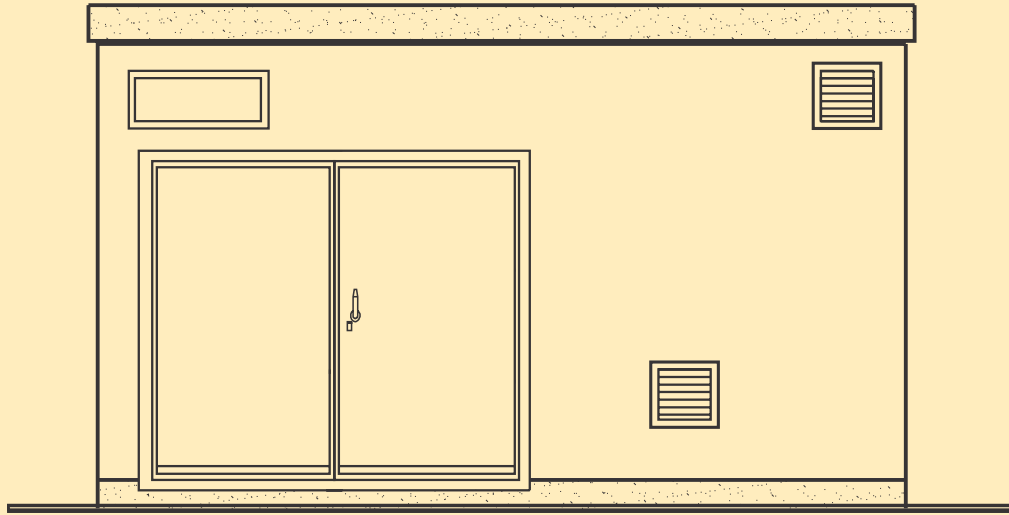
UF3554 - flat roof building without boiler room



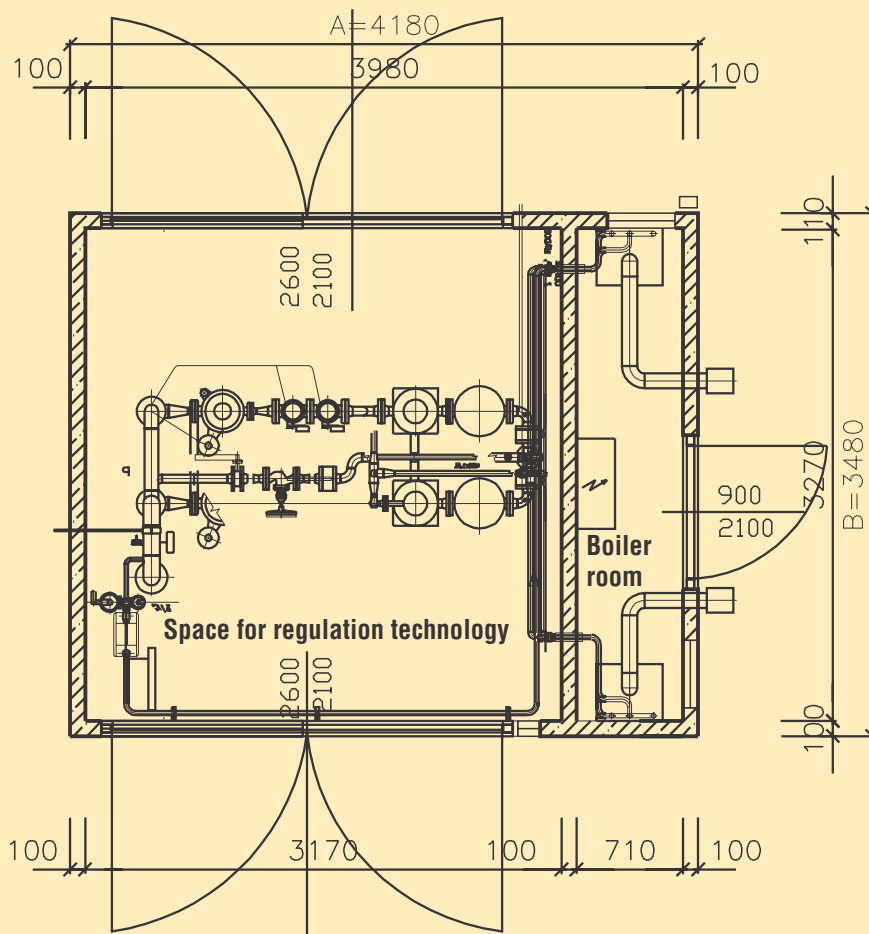
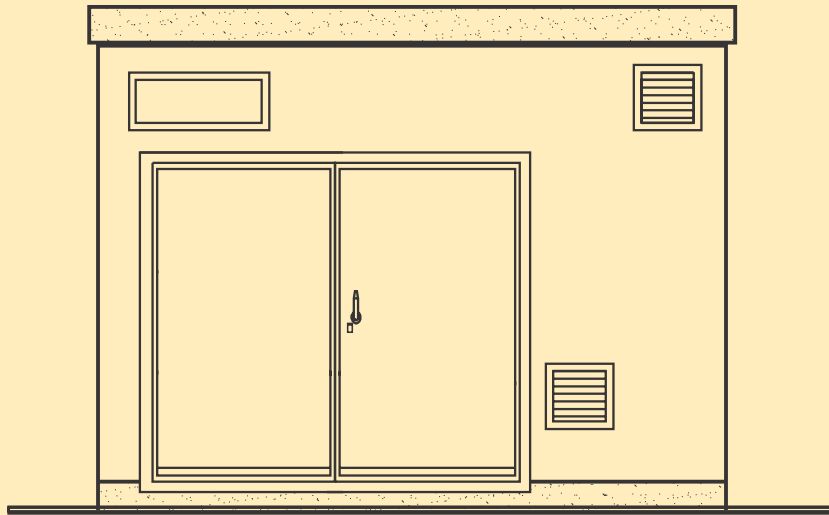
UF 3060 - flat roof building without boiler room



UF3054 - flat roof building with boiler room



UF3542 - flat roof building with boiler room



Examples of the BETONBAU Buildings with Partition Usage together with RS and Boiler Rooms Types

Type	Type RS	PN inlet	DN inlet/DN outlet	p ₁ [MPa]	p ₂ [MPa]
UF2536	RS 205/2/1	440	50/50	1,7	0,2-0,1
UF2536	RS 505/2/1	440	50/80	2,5-3,2	0,3-0,4
UF2542	RS 505/2/1	416	80/125	0,1 - 0,4	0,0021
UF2542	RS 205/2/1	440	50/80	2,0-4,0	0,4
UF2542	RS 405/2/1	440	50/100	1,7-2,4	0,3
UF2542	RS 505/2/1	440	50/100	1,5-4	0,4
UF2542	RS 805/2/1	440	50/150	1,2-2,5	0,3
UF3024	RS 205/2/1	440	50/50	1,7	0,1
UF3024	RS 505/2/1	440	50/80	2,5-3,2	0,3
UF3054	RS 1205/2/1	416	100/200	0,1-0,4	0,0021
UF3054	RS 1205/2/1	440	50/100	1,2-4	0,3
UF3054	RS 1505/2/1	440	50/100	2,5-4	0,3
UF3054	RS 2205/2/1	440	50/150	1,2-4	0,3
UF3054	RS 2505/2/1	440	50/150	1,2-4	0,3
UF3054	RS 1205/2/1	463	50/80	6,3	0,3
UF3054	RS 4005/2/1	463	50/150	2 - 5,5	0,3
UF3078	RS 10005/2/1	440	100/300	3,0-4,0	0,095
UF3542	RS 205/2/1	440	50/80	2,0-4,0	0,4
UF3542	RS 405/2/1	440	50/100	1,7-2,4	0,3
UF3542	RS 505/2/1	440	50/100	1,5-4	0,4
UF3542	RS 805/2/1	440	50/150	1,2-2,5	0,3
UF3548	RS 505/2/1	440	50/100	4	0,3
UF3548	RS 1205/2/1	440	50/100	0,6-4	0,2-0,3
UF3554	RS 805/2/1	440	50/100	1,6-2,5	0,3
UF3554	RS 1205/2/1	440	50/150	1,8-4	0,3
UF3554	RS 1505/2/1	440	50/150	1,8-4	0,3
UF3554	RS 2005/2/1	440	50/150	1,8-4	0,3
UF3554	RS 3005/2/1	440	100/150	1-2,5	0,4
UF3554	RS 5005/2/1	440	80/150	1,5-4	0,3
UF3554	RS 1205/2/1	463	50/80	6,3	0,3
UF3560	RS 2005/2/5	440	50/100/150	1,5-2,3	0,3
UF3566	RS 2005/2/5	440	50/100/150	1,5-2,3	0,3

Examples of the BETONBAU Buildings without Partition Usage together with RS types, without Boiler Room

Type	Type RS	PN inlet	DN inlet/DN outlet	p ₁ [MPa]	p ₂ [MPa]
UF3024	RS 1205/2/1	440	50/150	1,7-2,2	0,1
UF3060	RS 505/2/1	416	50/150	0,3	0,0022
UF3060	RS 205/2/1	440	50/50	1,5-2,5	0,1
UF3060	RS 255/2/1	440	50/80	1,2-4	0,3
UF3060	RS 505/2/1	440	50/100	1,5-2,5	0,3
UF3066	RS 505/2/1	416	50/150	0,3	0,0022
UF3066	RS 205/2/1	440	50/50	1,5-2,5	0,1
UF3066	RS 255/2/1	440	50/80	1,2-4	0,3
UF3066	RS 505/2/1	440	50/100	1,5-2,5	0,3
UF3072	RS 505/2/1	416	50/150	0,3	0,0022
UF3072	RS 205/2/1	440	50/50	1,5-2,5	0,1
UF3072	RS 255/2/1	440	50/80	1,2-4	0,3
UF3072	RS 505/2/1	440	50/100	1,5-2,5	0,3

Examples of the RS without Boiler Room and BETONBAU Buildings, without Partition

Type RS	PN inlet	DN inlet/DN outlet	Type	p ₁ [MPa]	p ₂ [MPa]
RS 505/2/1	416	50/150	UF3060	0,3	0,0022
RS 505/2/1	416	50/150	UF3066	0,3	0,0022
RS 505/2/1	416	50/150	UF3072	0,3	0,0022
RS 205/2/1	440	50/50	UF3060	1,5-2,5	0,1
RS 205/2/1	440	50/50	UF3066	1,5-2,5	0,1
RS 205/2/1	440	50/50	UF3072	1,5-2,5	0,1
RS 255/2/1	440	50/80	UF3060	1,2-4	0,3
RS 255/2/1	440	50/80	UF3066	1,2-4	0,3
RS 255/2/1	440	50/80	UF3072	1,2-4	0,3
RS 505/2/1	440	50/100	UF3060	1,5-2,5	0,3
RS 505/2/1	440	50/100	UF3066	1,5-2,5	0,3
RS 505/2/1	440	50/100	UF3072	1,5-2,5	0,3
RS 1205/2/1	440	50/150	UF3024	1,7-2,2	0,1

Technological Buildings Variel, a.s.



These buildings consist of steel frame, with coating and roof made of glass-fiber reinforced plastic (GFRP). These coating material assures high durability and minimal costs for maintenance. Usage of these buildings is suitable on places, where it is necessary to put RS into quick operation.

Design

Building frame is welded from thin wall steel profiles. The shorter building sides are coated with GFRP plates. Front and rear walls consist of two-wing GFRS gates.

Doors

Doors are lockable with the possibility of their fixation in open position. The left wing is prepared for installation of assembly stand.

Roof

It is made of GFRP, of low spire shape, with ventilation chimney. The roof is sandwich-type, with 30mm polyurethane insulation.



Surface Finish

Outer gelcoated side of laminate parts is finished in RAL colour shades, according to the customer wish.

Flammability of the Used Materials

All laminated parts are enriched with extinguishing components, resulting in heat heavy-duty resistant material. It complies with the group „C“ material in acc. with ČSN 73 0862.

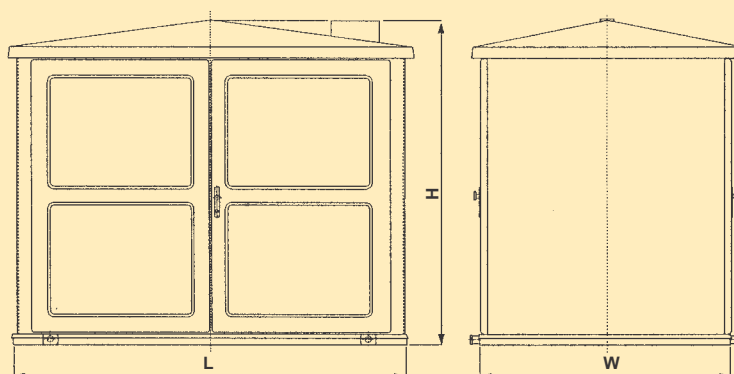
Transportation and Installation

It is assured being assembled together with RS technology, at the customer construction site from SČA, a.s., in mutually agreed time of delivery.



Technological Buildings Dimensions

Type	Outer dimensions (mm)			Weight (kg) without technology of RS
	Length	Width	Height	
OPD 1/2 RS	2130	1200	2300	390
OPD 2/3 RS	3070	2070	2400	630



Examples of the Building VARIEL without Partition together with RS Types

Type	Type RS	PN inlet	DN inlet/DN outlet	p ₁ [MPa]	p ₂ [MPa]
OPD 1/2	RS 303/1/1	406	50/100	0,2-0,3	0,015
OPD 1/2	RS 503/1/1	406	50/100	0,3	0,02
OPD 1/2	RS 603/1/1	406	50/80	0,3	0,05
OPD 1/2	RS 83/1/1	416	50/50	0,05-0,3	0,003-0,005
OPD 1/2	RS 253/1/5	416	50/40/80	0,23-0,2	0,002
OPD 1/2	RS 403/1/1	416	50/100	0,3	0,02
OPD 1/2	RS 403/2/1	416	50/100	0,1	0,003
OPD 1/2	RS 523/1/1	416	65/80	0,15-0,28	0,1
OPD 1/2	RS 203/1/1	440	50/80	2,5	0,0023
OPD 1/2	RS 203/2/1	440	50/50	0,1	0,3
OPD 1/2	RS 403/1/2	440	50/100	1,5-4	0,002
OPD 1/2	RS 503/1/1	440	50/80	3,0-4,0	0,1
OPD 1/2	RS 503/2/1	440	50/80	0,8-4	0,3
OPD 1/2	RS 703/2/1	440	50/80	1,5-2,3	0,3
OPD 1/2	RS 753/1/1	440	50/100	1,7-4	0,1
OPD 2/3	RS 403/1/1	416	50/100	0,08-0,3	0,02
OPD 2/3	RS 803/1/1	416	100/100	0,1-0,3	0,05
OPD 2/3	RS 1003/2/1	416	80/150/100	0,17-0,19	0,005
OPD 2/3	RS 1203/2/1	416	50/150	0,6-0,8	0,03
OPD 2/3	RS 1503/1/1	416	80/200	0,3	0,0025
OPD 2/3	RS 2203/1/1	416	100/100/100	0,3	0,025
OPD 2/3	RS 503/1/1	440	50/100	2,5-4	0,1
OPD 2/3	RS 503/2/1	440	50/100	1,7-4	0,02
OPD 2/3	RS 703/2/1	440	50/80	2,5-4	0,3
OPD 2/3	RS 1203/2/1	440	50/100	2-2,5	0,1
OPD 2/3	RS 2003/1/1	440	50/100	1,4-4	0,3
OPD 2/3	RS 2003/2/1	440	50/100	2,7-4	0,3
OPD 2/3	RS 303/2/1	463	50/100	2-6,3	0,05-0,8
OPD 2/3	RS 1203/2/1	463	50/50	2-6,3	0,8



Buildings from Sloupárna Majdalena, s.r.o.



These buildings, intended for the RS technology are of self-supporting shell construction, made of monolithic concrete and with separate roof steel frame. Basic construction consists of walls, thickness 100 mm, which being reinforced, enable the easy manipulation with the whole technology. Spaces for boiler room placing, serving to gas preheating, are gastight separated from the RS technology.

Roof

The roof is, in acc. with the customer wish, shread head roof, covered with "Bramac" or it can be delivered being covered with asphalt shingle or in a flat roof design. Frame of the shroud is made of steel, without soffit and with fire safe partition. Ventilation outlet is placed in the roof, solved by means of ventilating slats. Cordons sheeted with material „Everwood“, dripping are of plastics. Thunderstorm protection is also a subject of delivery.



Surface Finish

Surface of the ferroconcrete skeleton is added plasters with rough or smooth surface. Colour depends on the customer wish. Bottom part - plinth is coated by ceramic stripes, of brown colour up to 40 cm above the ground. Inner walls are covered with whitewashed limestone plaster.

Door

Doors, gates are made of glass laminate or steel. Beside ordinary opening gates are suitable also lifting gates.

Floor

Floor is made of reinforced concrete panel (firmly connected with the vertical construction of the RS). This ground panel is furnished with holes for inlet and outlet connecting gas pipeline and concreted in steel parts for fastening of the RS technology. There are also grooves for electric wiring.

Inner Disposition

Inner disposition is solved acc. to the customer wish, in variants without partition and with partition for placing of boiler room, preheating the gas.

Building-technical Solution

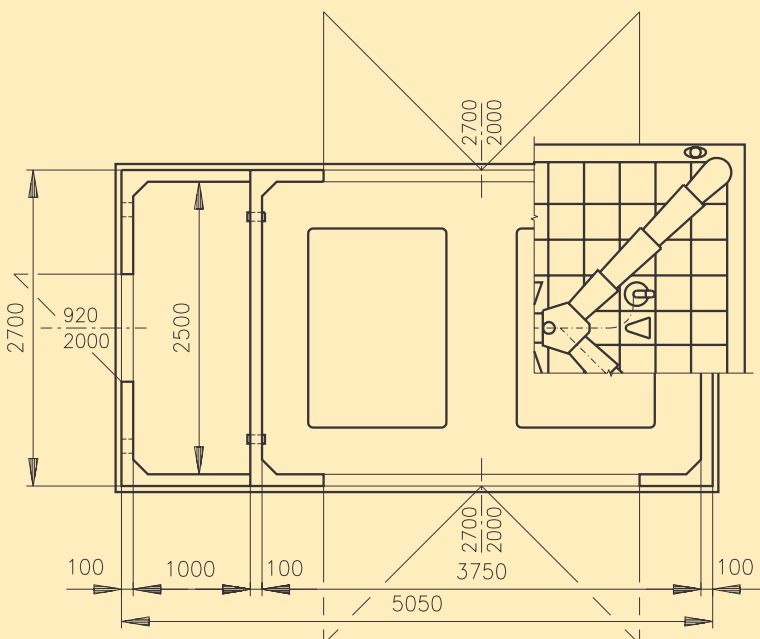
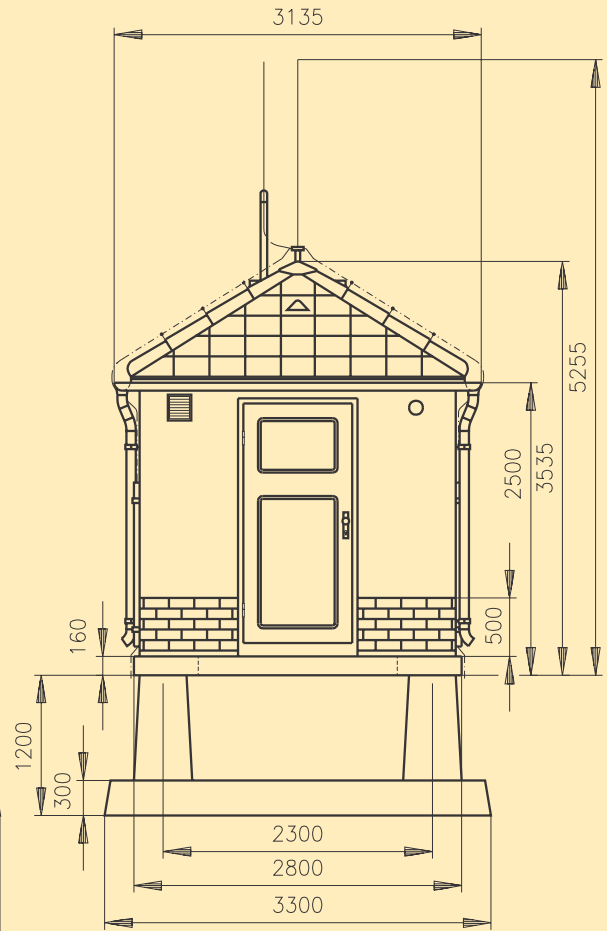
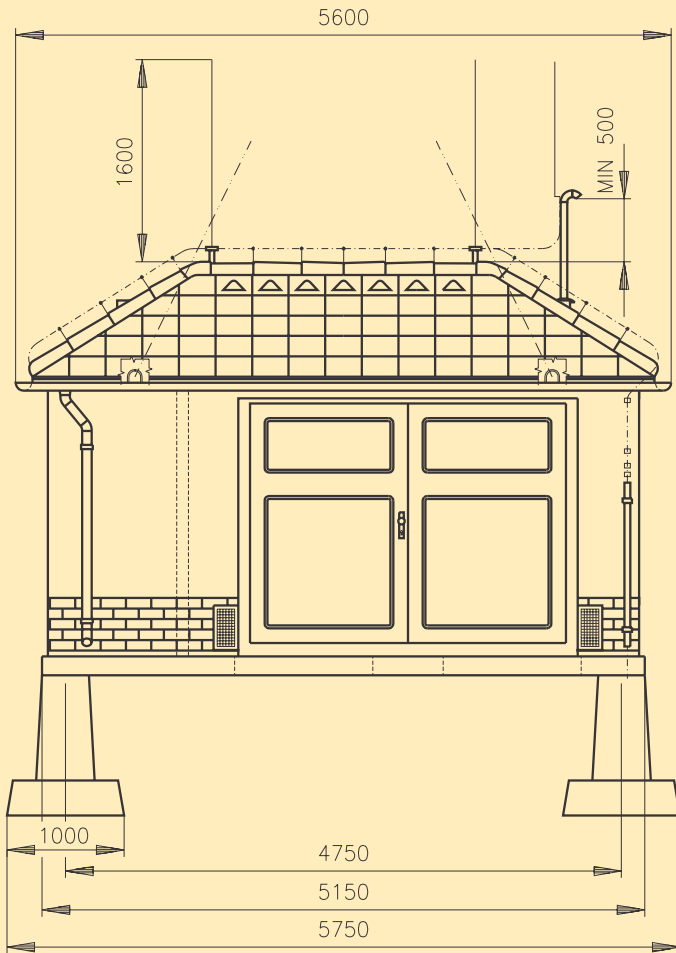
Building - technical solution is adaptable in accordance with investor´s wishes, with conditions of a territorial planning, etc.

Dimensions

Dimensions of buildings for the RS are derived from the producer possibilities, and are flexible after negotiation. Buildings are produced in basic sizes as can be seen from the following table and building schemes:

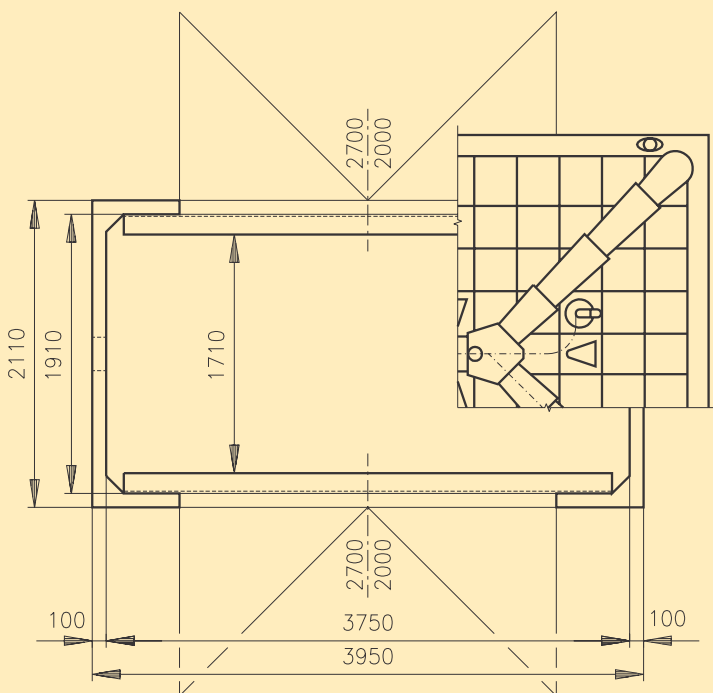
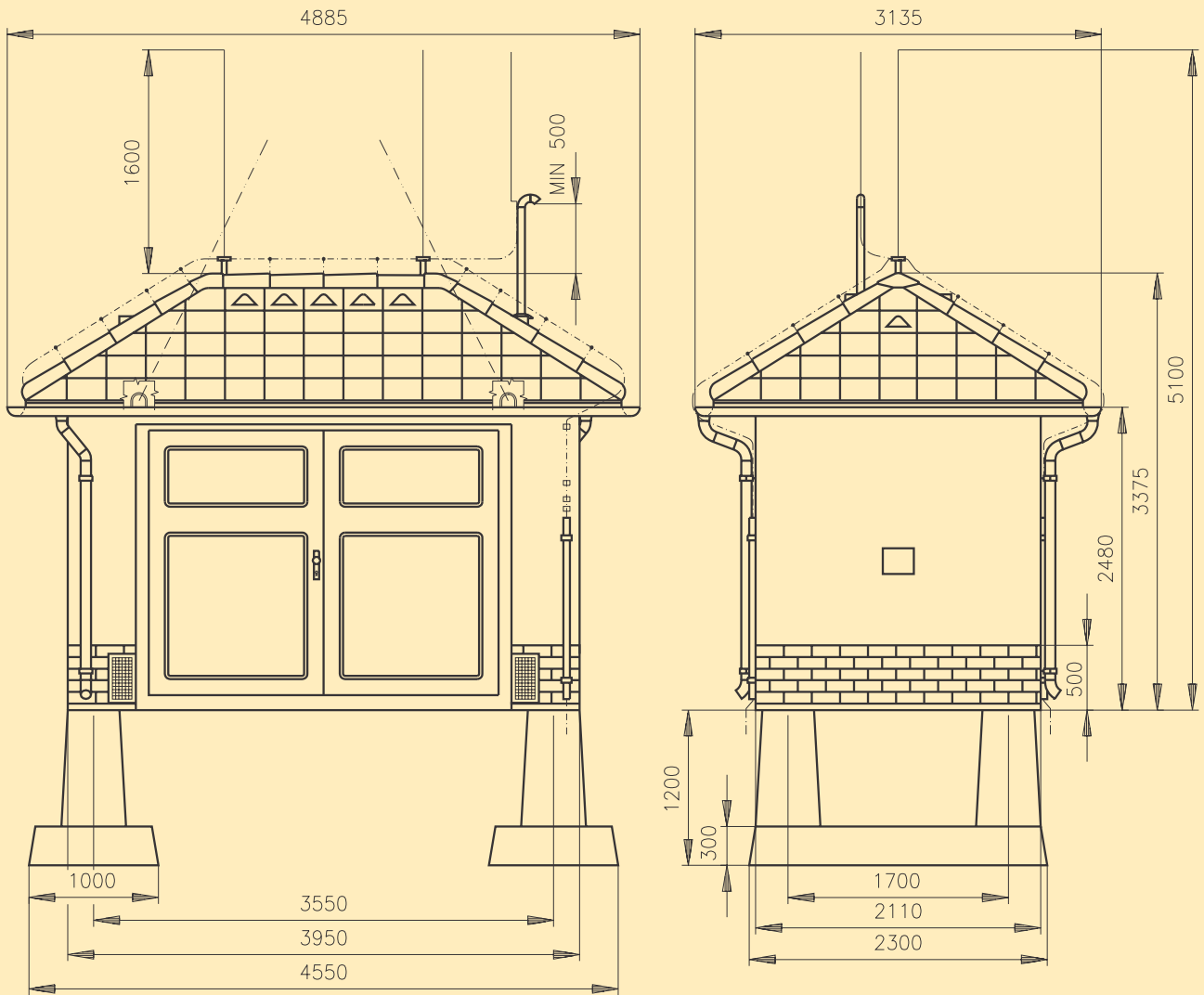
Inner dimensions of produced buildings			
Type	Length (mm)	Width (mm)	Width of boiler room(mm)
Without boiler room	3950	2110	
With boiler room	4050	2300	1000
With boiler room	5150	2800	1000
With boiler room	5990	3020	1100
With boiler room	7780	3020	1100

Reinforced Case with Gas Tight Partition (dimensions 5150 x 2800)



MASS (t)	
without RS technology	
Case	11,970
Roof	1,300
Basement	3,150

Reinforced Case without Gas Tight Partition (dimensions 3950x2110)



MASS (t)	
without RS technology	
Case	4,350
Roof	1,135
Basement	2,400

Certification

Our main aim is to supply to our customers products, fulfilling their needs and requirements, being at the same time in accordance with appropriate standards and regulations. SČA, a.s. is aware of the fact that this aim can be reached only under condition of the Quality System Management introduction. Therefore, as one of the first in this branch it obtained this certificate in the year 1994, based on the standard EN ISO 9001. Except above-mentioned SČA, a.s. posses their owns product certificates.



CERTIFICATE
The TÜV CERT Certification Body
of Rheinisch-Westfälischer TÜV e.V.
hereby certifies in accordance with TÜV CERT
procedure that

SEVEROČESKÁ ARMATURKA, a.s.
401 25 Ústí nad Labem
Czech Republic

has established and applies a quality system for

**Industrial valves, devices for distribution and
regulation of gases, foundry products**

An audit was performed, Report No. 623103
Proof has been furnished that the requirements according to
EN ISO 9001 : 1994
are fulfilled, The certificate is valid until June 2003
Certificate Registration No. 041004259



RWTÜV

Essen, 27.05.2000

[Signature]
TÜV CERT Certification Body
of Rheinisch-Westfälischer TÜV e.V.

001004259/0001



Questionnaire for RS



SEVEROČESKÁ ARMATURKA, a. s.
Ústí nad Labem

Demand: yes no

Order: yes no

Name of the construction site: Expected date of delivery:

Contact person name: tel.:

Address: fax:

Parameters

Type of the gas: Minimal temperature on the inlet:

Demanded output - min.: Stm³/h max.: Stm³/h

Inlet pressure - min.: MPa, max.: MPa, outl. press.: MPa

Partial take-off - outlet pressure: MPa, output: Stm³/h

Design

a) one-row: yes no

b) two-row: yes no

c):

Gas preheating

a) without heating: yes no

b) with electric heating: yes no

c) with gas-water heat exchanger yes no

Measurement

a) RS without measurement: yes no

b) RS with gasmeter: yes no type

c) RS with spacer for gasmeter: yes no type

d) RS with recounter: yes no type

e) RS with welding on pieces for recounter connection: yes no type

f) RS with pressure and temperature registration devices: yes no

Building

a) yes no

b) steelplastic: yes ne

c) reinforced concrete: yes no

with basement: yes no

Odorisation:

yes no

type

Other

Requirements of the gas company:

.....

.....

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Phone: **+420 47 2706 xxx**
Business Director: **220**

Business Department

Export Section Head: **504**
Export Sales Manager: **564**
Export Sales Manager: **291**
Export Sales Manager: **293**
Export Sales Manager: **297**

Gas Valves and Pressure Reducing Stations, Heat Exchanging Stations and Boiler Houses Department

E-mail: **rs@sca.cz**
Fax: **+420 47 5601 637**
Phone: **+420 47 2706 xxx**
Sales Manager of this Department: **568**
Gas Valves Sale: **237**
RS, Boiler House and Heat Exchanging Stations Sales: **577**

