

VIADRUS

**INSTRUCTIONS FOR OPERATION
AND INSTALATION OF THE FURNACE**

VIADRUS U 22 C

VIADRUS U 22 D

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Dear customer,

thank you for buying the general – purpose VIADRUS HERCULES furnace and thus showing belief in the company ŽDB GROUP, a.s., KKCG Industry Group member, Heating Technique Company VIADRUS.

At first read this operating manual (especially Chapter Nr.7 – User’s furnace operation) to get used to a proper usage with your new product from the very beginning. We request to maintain the further mentioned information and particularly to perform the prescribed annual checks by an authorized specialized company by which a long – time failure – free operation of your furnace - to your and our satisfaction - is secured.

The furnace VIADRUS U 22 is a general – purpose cast iron sectional low – pressure furnace intended for burning of:

- solid fuels coke, anthracite, wood commercial marking VIADRUS U 22 C
- wood (optionally coke and anthracite) commercial marking VIADRUS U 22 D
- gas fuels natural gas commercial marking VIADRUS U 22 P
- liquid fuels furnace oil extra light – TOEL commercial marking VIADRUS U 22 N

Burning of other materials such as plastic is unallowable.

1. Usage and advantages of the furnace

Two and three – sectional size of the furnace VIADRUS U 22 is appropriate for heat source reconstruction in self – contained flats, for smaller residential and recreational facilities. Bigger sizes of the furnace meet the requirements of heating the family houses, shops, schools, etc.

The furnace is produced as hot – water with natural and forced circulation of heat water and operational overpressure to 8 bar.

The VIADRUS U 22 D furnace is different from the VIADRUS U 22 C furnace version by its enlargement of the stoke hole so that it is possible to burn even bigger clogs up to the average of 220 mm. By burning wooden logs the heat work difficulty is considerably reduced and the service quality is increased. The amount of ash is also substantially smaller and it is possible to further use it as fertilizer.

Advantages of the furnace:

1. High operating life of cast iron exchanger and all other parts with respect to the quality of used materials.
2. Design approved in the long term.
3. Elaborate production technology on automatic forming lines with consistent and approved quality of the production process (ISO 9001, ISO 14 001).
4. Efficiency of coke and anthracite burning – 75 – 80 %, efficiency of wood burning – 71 – 78 %.
5. Simple service and maintenance.
6. Low demandingness for chimney draught
7. Power gradation according to the sections
8. Possibility of furnace transformation of burning of solid fuels to gas or liquid fuels or vice versa.

2. Technical data of the furnace VIADRUS U 22

Chart Nr.1 Dimensions, technical parameters of the furnace VIADRUS U 22 C

Section number	pieces	2	3	4	5	6	7	8	9	10	
Weight	kg	195	232	268	304	342	380	418	456	494	
Water space volume	l	26,1	31,5	36,2	40,9	45,6	50,3	55,0	59,7	64,4	
Firing chamber volume	l	21	34	47	60	73	86	99	112	125	
Firing chamber depth	mm	149	244	339	434	529	624	719	814	909	
Lightness of the stove - pipe	mm	156								176	
Furnace dimensions: - height x width	mm	974 x 520									
- depth	mm	560	655	750	845	940	1035	1130	1225	1320	
Water operating overpressure	bar	4									
Testing water overpressure	bar	8									
Hydraulic loss	-	See picture Nr.1									
Recommended heat water operating temperature	°C	60-90									
Noise level	dB	Not exceeding the level of 65 dB (A)									
Minimum chimney draught	mbar	0,12	0,14	0,16	0,18	0,20	0,22	0,24	0,26	0,28	
Furnace connections - heat water		DN 70									
- returnable water		DN 70									

Chart Nr.2 Dimensions, technical parameters of the furnace VIADRUS U 22 D

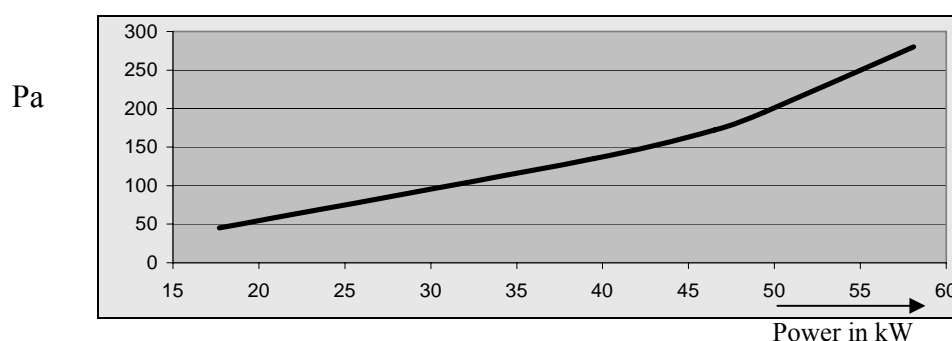
Section number	pieces	4	5	6	7	8	9	10	
Weight	kg	257	295	333	371	409	447	485	
Water space volume	l	36,2	40,9	45,6	50,3	55,0	59,7	64,4	
Firing chamber volume	l	47	60	73	86	99	112	125	
Firing chamber depth	mm	339	434	529	624	719	814	909	
Lightness of the stove - pipe	mm	156						176	
Furnace dimensions: - height x width	mm	974 x 520							
- depth	mm	750	845	940	1035	1130	1225	1320	
Water operating overpressure	bar	4							
Testing water overpressure	bar	8							
Hydraulic loss	-	See picture Nr.1							
Recommended heat water operating temperature	°C	60-90							
Noise level	dB	Not exceeding the level of 65 dB (A)							
Minimum chimney draught	mbar	0,16	0,18	0,20	0,22	0,24	0,26	0,28	
Furnace connections - heat water		DN 70							
- returnable water		DN 70							

Chart Nr. 3 Heat - technical parameters of the furnace at COKE and ANTHRACITE burning
granularity 30 – 60 mm heating value: 26 - 30 MJ. kg-1

Section number		2	3	4	5	6	7	8	9	10
Rated power	kW	11,7	17,7	23,3	29,1	34,9	40,7	46,5	52,3	58,1
Efficiency	%	75 - 80								
Orientation fuel consumption	kg/h	1,9	2,9	3,8	4,8	5,8	6,7	7,7	8,6	9,6
Product of consumption temperature	°C	max. 280								

Chart Nr. 4 Heat technical parameters of the furnace at WOOD burning
humidity 15 - 25 % heating value: 12 - 15 MJ. kg⁻¹

Section number		4	5	6	7	8	9	10
Rated power	kW	20	25	30	35	40	45	49
Efficiency	%	71 - 78						
Orientation fuel consumption	kg/h	6,8	8,4	10,1	11,8	13,5	15,2	16,6
Product of consumption temperature	°C	max. 320						



Pict. Nr. 1 Hydraulic loss of the boiler drum

3. Description

3.1 Construction of the furnace

The main part of the furnace is the cast iron section boiler drum made of grey cast iron according to:

ČSN 42 2415 "Grey iron 42 2415 with luminated graphite", or

ČSN 42 2420 "Grey iron 42 2420 with luminated graphite"

Pressure parts of the furnace correspond to the demands on solidity according to:

ČSN 07 0240 "Heatwater and low – pressure steam boilers". Basic provisions.

ČSN 07 0245 "Heatwater and low – pressure steam boilers". Heatwater boilers to the power of 50 kW. Technical demands. Testing.

The boiler drum consists of sections with the help of pressured boiler nipples and is secured with boiler screws. The sections create burning and ash space, water space and a convective part. Heat water input and output are situated at the back part of the furnace.

The back section of the furnace has a smoky chimney – pot and a heat water flange in the upper part, and a returnable water flange with a socket for impregnating and clearing plug. Stoker and ash door and a firebox door under them are fixed to the front section.

The whole boiler drum is isolated with a stifling, mineral isolation that reduces losses by sharing heat into the surroundings. The steel jacket is fitted in colour with a quality comaxite paint.

At seven to ten – sectional size of the VIADRUS U 22 C furnace two tapes of medium sections are used: at the front part of the furnace the sections are without a molding and in the back part with a molding. The molding closes the burning space and carries back the flame and product of consumption from the back space to the front part of the furnace, i.e. by the back path in smoky draughts it is perfectly taken advantage of the product of consumption heat.

Number of sections without and with a molding is mentioned in the following chart:

Chart Nr.5 Medium sections of the VIADRUS U 22 C furnace

Size of the furnace in sections	2	3	4	5	6	7	8	9	10
Medium section with a molding	-	1	2	3	4	4	5	5	6
Medium section without a molding	-	-	-	-	-	1	1	2	2

At the VIADRUS U 22 D furnace three types of medium sections are used: in the front part of the furnace (except the four – section size) there is a section without a medium ribbing for easier fuel inserting to the average up to 220 mm, then sections without a molding, in the back part with a molding. The molding closes the burning space and carries back the flame and product of consumption from the back space to the front part of the furnace, i.e. by the back path in smoky draughts it is perfectly taken advantage of the product of consumption heat.

Chart Nr. 6 Medium sections of the VIADRUS U 22 D furnace

Size of the furnace in sections	4	5	6	7	8	9	10
Medium section without ribbing	-	1	1	1	1	1	1
Medium section with a molding	2	2	3	4	5	5	6
Medium section without a molding	-	-	-	-	-	1	1

3.2 Regulating and security elements

The smoky flap of the smoky chimney – pot regulates the climb of the product of consumption from the furnace to the chimney. It is regulated with the handle with a rod in the upper left part of the furnace next to the stoker hole.

Stifling of the ash door regulates the inflow of the combustion air under the grate of the furnace. It is regulated by the draught governor or manually with an adjusting screw of the stifling.

The air rose of the stoker door serves for carrying the secondary air to the burning space. To control the rose it is necessary with respect to the higher surface temperature of the stoker door to use an instrument that is part of the delivered tools.

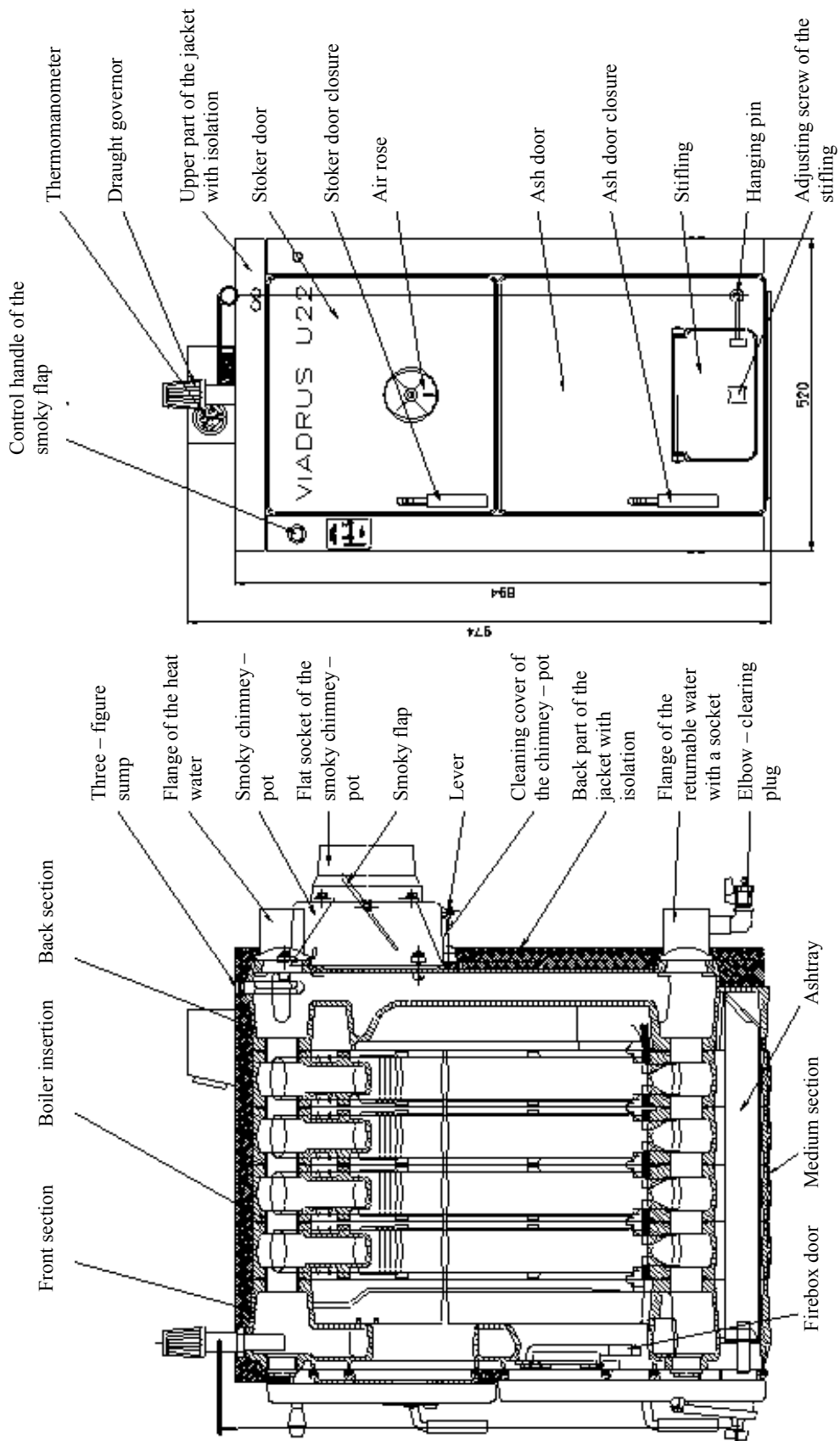
The cleaning cover of the smoky chimney – pot located in its bottom part serves for cleaning the embedded waste product caused by burning.

There are barriers of the smoky channel between the front and medium sections above the stoker hole of the furnace VIADRUS U 22 C. It serves for reducing the draw – away cross - section and for a better utilization of the product of consumption at the furnaces of smaller power (2 – 5 sectional). They are used with a various cross – section width according to the sizes of the furnaces in conformity with this chart:

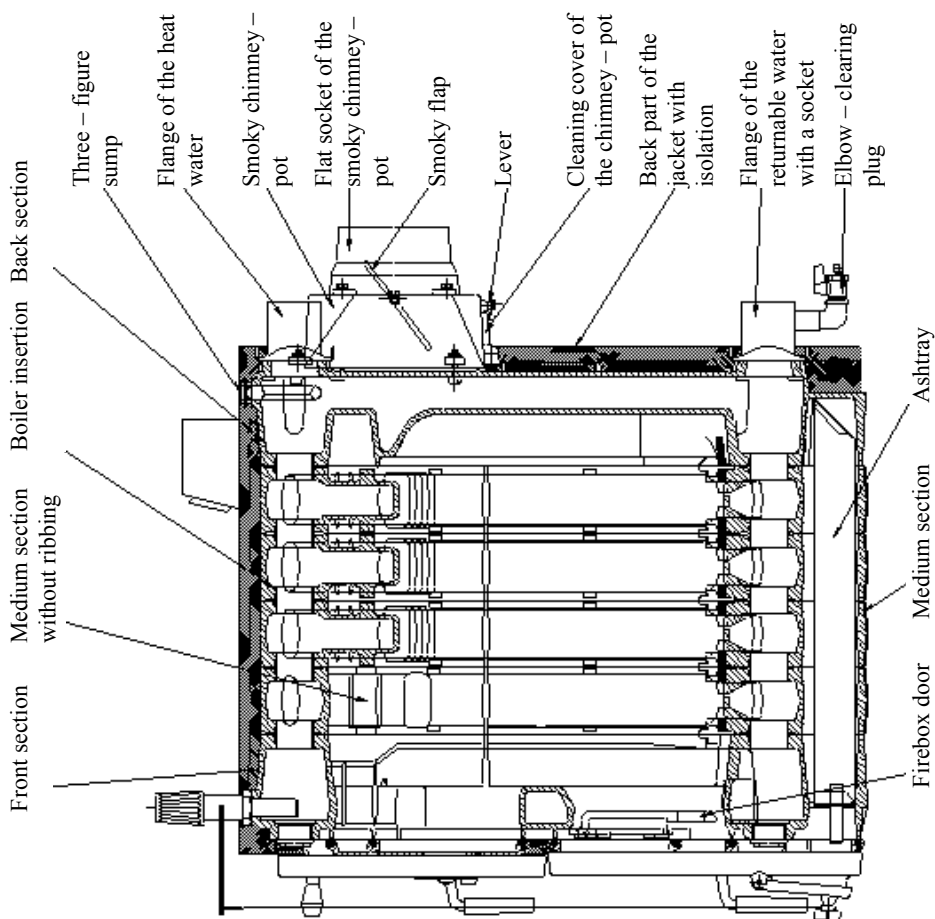
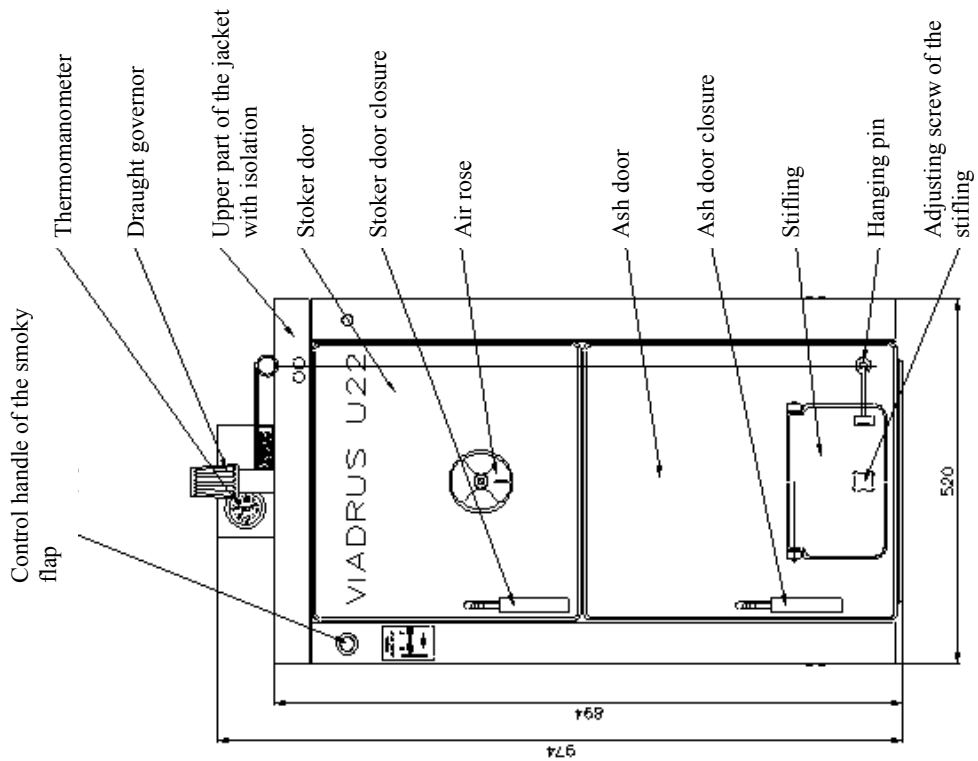
Chart Nr.7 Barriers of the smoky channel of the VIADRUS U 22 C furnace

Furnace section number(pieces)	Cross – section of the smoky channel width (mm)	Barrier number (pieces)
2	12	2
3	24	2
4	36	2
5	48	2

A thermomanometer in the control box serves as an associated device for measuring the temperature of the heat water and water pressure in the heat system. The sump of the thermomanometer sensor is located in the upper part of the back boiler section.



Pict. Nr. 2 Design of the VIADRUS U 22 C furnace



Pict. Nr. 3 Design of the VIADRUS U 22 D furnace

4. Placing and installation

4.1 Regulations and instructions

The furnace for solid fuels can be installed by a company with a valid authorization to perform its installation and maintenance.

For installation a project in accordance with valid regulations must be executed.

a) for heat formation

- ČSN 06 0310 Central heating, projecting and assembly
- ČSN 06 0830 Security equipment for central heating and heating – up TUV
- ČSN 07 7401 Water and steam for thermal energetic equipment with an operating steam pressure to 8 MPa
- ČSN 07 0240 Heatwater and low – pressure steam boilers
- ČSN 07 0245 Heatwater and low – pressure steam boilers. Heatwater boilers to the power of 50 kW.

b) for chimney

- ČSN 73 4210 Chimney and fittings up take performance and fuel appliance connection
- ČSN 73 4201 Chimney and fittings up take projection

c) with regard to fire regulations

- ČSN 06 1008 Fire security of the thermal equipments
- ČSN 73 0823 Fire technique of material characteristics. Inflammability levels of building materials.

Under the notice of the Czech Office of Labour Security – Code of Law Nr.91/1993 it is necessary to distinguish at projecting, establishing, placing and service of the low – pressure boiler rooms:

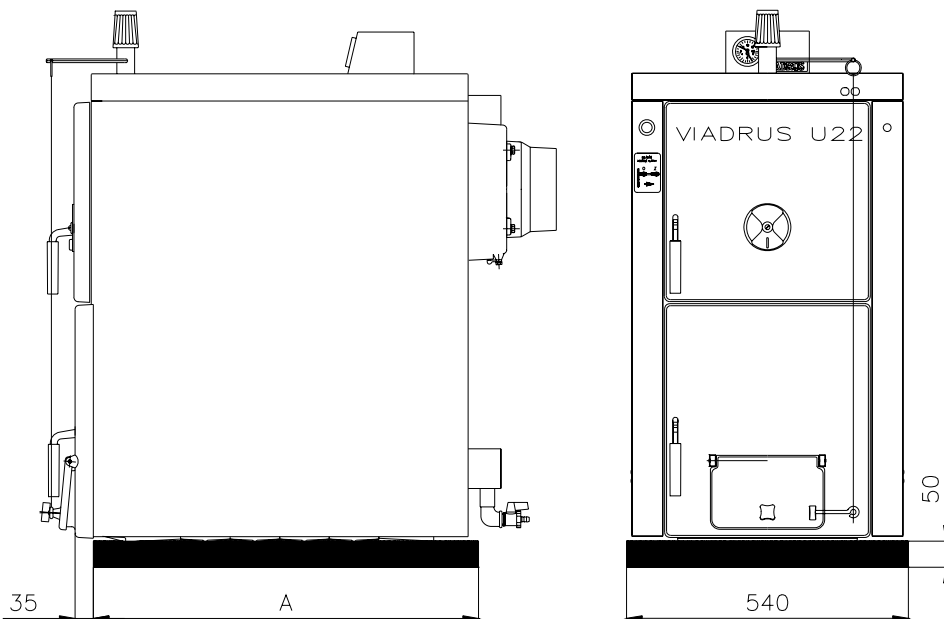
- furnaces with a rated thermal power up to 50 kW
- furnaces with a rated thermal power up to 50 kW and more – boiler room of category III – boiler VIADRUS U 22 C in 9 and 10 sectional design

4.2 Placing possibilities

The VIADRUS U 22 furnace is approved for installation in non – residential spaces (for example – (cellar, corridor, etc.)

Furnace placing with regard to fire regulations:

1. Placing on floor of flame resistant material (Pic.4)
 - furnace to be put on a flame resistant backing exceeding the furnace platform over 20 mm at sides and only on the boiler drum depth
 - if the furnace is situated in a cellar we recommend to place it on a bedding of minimum 50 mm height



Section number	2	3	4	5	6	7	8	9	10
A [mm]	325	420	515	610	705	800	895	970	1085

Pict. Nr. 4 Bedding dimensions

2. Safety distance from the flammable materials

- at installation and even service of the furnace it is necessary to keep a safety distance of 200 mm from the flammable materials of flammability levels of B, C1 and C2 (according to ČSN 06 1008)
- for easy flammable materials of flammability level of C3 that quickly burn and burn themselves even after removing the embrazing source (such as paper board, cardboard, asphalt and tar boards, wood and wood – fibre boards, plastic materials, floor coverings) the safety distance is doubled to, i.e. for 400 mm
- the safety distance is necessary to be doubled even in case when the flammability level of the building material is not proved

Chart Nr. 8 Flammability levels of building materials and products

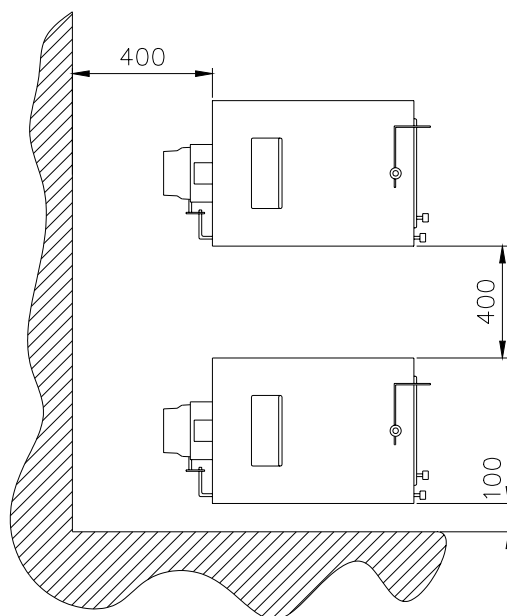
Flammability level of building materials and products	Building materials and products included in flammability level (selection from ČSN 73 0823)
A – fire - resistant	granite, sandstone, concrete, bricks, ceramic tiles, mortars, fire plasters, ...
B – hard - flammable	acumin, isumin, cement – bonded board, lignos, boards and basalt felts, boards out of fibreglass, ...
C₁ – heavily - flammable	beech wood, oak, hobrex boards, plywoods, wersalite, formica, sirkolit, ...
C₂ – medium - flammable	pine wood, larch, spruce, wood chip and cork boards, rubber floor coverings, ...
C₃ – easily - flammable	asphalt board, wood–fibre boards, wood–pulp materials, polyurethane, polystyrene, polyethylene, PVC, ...

The furnace placing with respect to the necessary handling space:

- basic surroundings of AA5/AB5 according to ČSN 33 2000-3
- handling space of minimum 1000 mm in front of the furnace must be maintained
- a minimum distance of 400 mm between the back part of the furnace and the wall
- to maintain space for access to the back part of the furnace of minimum 400 mm at least from one lateral face
- a minimum distance of 100 mm from the side wall

Fuel placing:

- it is disallowed to store fuel behind the furnace or to unload it beside the furnace in the distance smaller than 400 mm
- it is disallowed to store fuel between two furnaces in a boiler room
- the producer recommends to keep distance of minimum 1000 mm between the furnace and fuel or to place the fuel to a another room than that where the furnace is installed



Pic. Nr.5 Furnace placing in a boiler room

5. Order, delivery and assembly

5.1 Order

In the order the following is needed to be specified:

- 1) Furnace design
 - VIADRUS U 22 C furnace
 - VIADRUS U 22 D furnace
- 2) Furnace size

- 2 – sectional size	- 7 – sectional size
- 3 – sectional size	- 8 – sectional size
- 4 – sectional size	- 9 – sectional size
- 5 – sectional size	- 10 – sectional size
- 6 – sectional size	
- 3) Demands on optional accessories

5.2 Delivery and accessories

The VIADRUS U 22 furnace is delivered according to the order in a manner that a complete boiler drum is located on the palette and a covered boiler jacket is fixed on the side. The accessories are stored inside the boiler drum and is available after opening the stoker hole. The furnace is covered in the transfer packing and must not be turned over during the transit, only a declination into sides for taking down of the boiler drum packing is allowed.

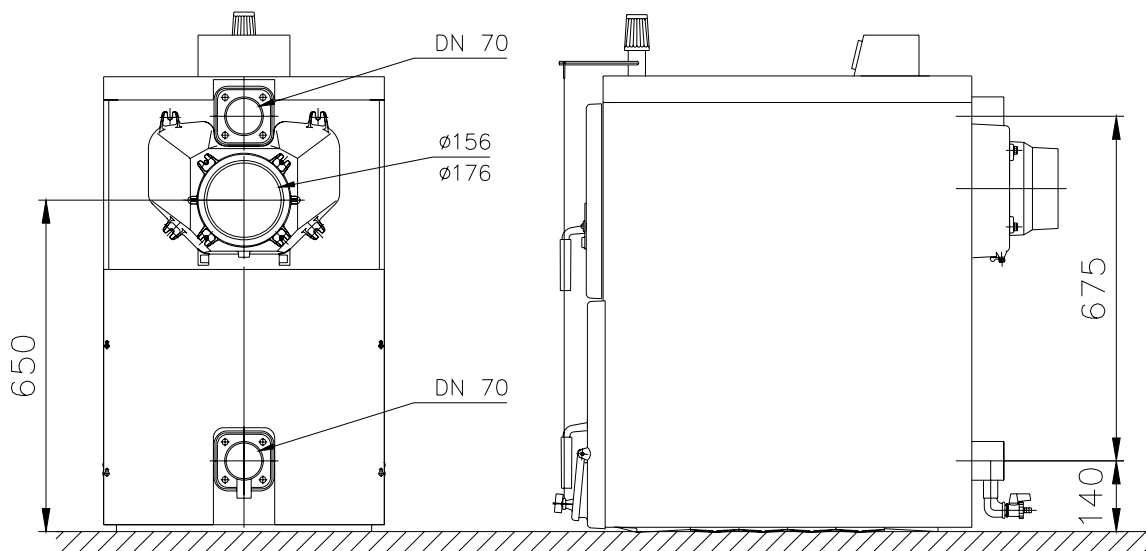
Standard accessories for the VIADRUS U 22 furnace:

- cleaning tools (hook, brush with shaft, point, hanger)	- 4 pieces	nut
- 1 piece ashtray	- 4 pieces	flexible pins ϕ 3
- 1 piece control box	- 2 pieces	bushings
- 1 piece thermomanometer	- 7 pieces	blind flanges
- 1 piece impregnating and clearing plug Js 1/2"	- 4 pieces	screws into metal
- 1 piece draught regulator complete	- 1 piece	flange of heat water DN 70
- 2 pieces closure Js 6/4"	- 1 piece	flange of returnable water DN with a socket Js 1/2" for impregnating and clearing plug
- 1 piece stifling screw	- 1 piece	elbow Js 1/2"
- 1 piece rod with a control handle of the smoky flap	- 2 pieces	sealing ϕ 85 x 60 x 3
- 1 piece control label of the smoky flap	- 1 piece	operating key
- 4 pieces connecting pin of the jacket	- commercial technique documentation	
- 4 + 3 pieces embeddings		

5.3 Assembly techniques

Boiler drum installation

1. Put the boiler drum on an embedding
2. Put a sealing ϕ 86 x 60 x 3 on the upper flange part of the back section and fix the flange of the heat water. The flange to be welded to the distribution of the heat water in advance.
3. Put a sealing ϕ 86 x 60 x 3 on the bottom flange part of the back section and fix the flange of the returnable water with a socket for impregnating and clearing plug. The flange to be welded to the distribution of the returnable water in advance.
4. An elbow with an impregnating and clearing plug to be screwed to the flange socket of the returnable water after connection of the furnace to the heat system
5. To put the stove – pipe to the smoky chimney - pot and penetrate it into the chimney hole
6. To screw the draught controller to the hole in the upper part of the front section
7. Two holes with a js 6/4" thread in the front section to blind with js 6/4" closures

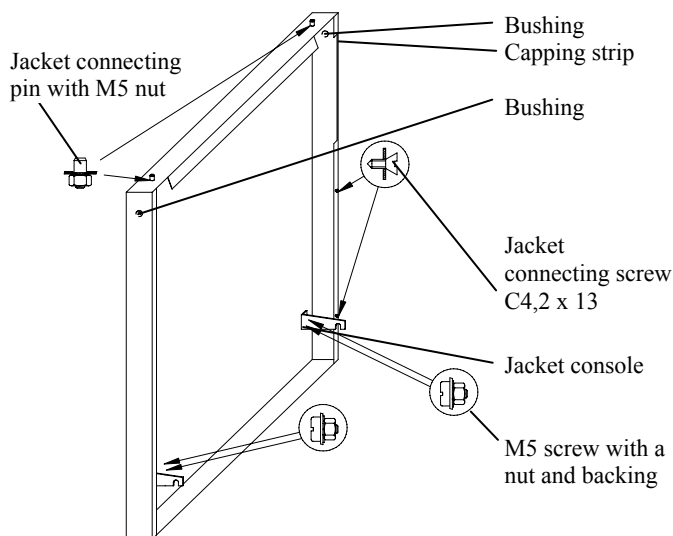


Pic. Nr.6 The VIADRUS U 22 furnace connecting dimensions

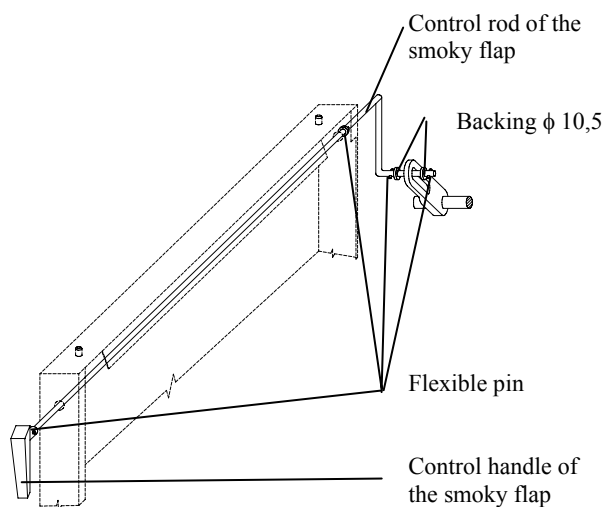
Jacket assembly

1. Take the jacket off the cardboard packing

2. To sink the jacket side parts with an enclosed connecting material and fix it with brackets according to the picture nr. 7
3. To unloose the bottom anchor screws and put on the side jacket brackets. Insert the front brackets between the backings with nuts and front section body, the back brackets to be inserted directly to anchor screws.

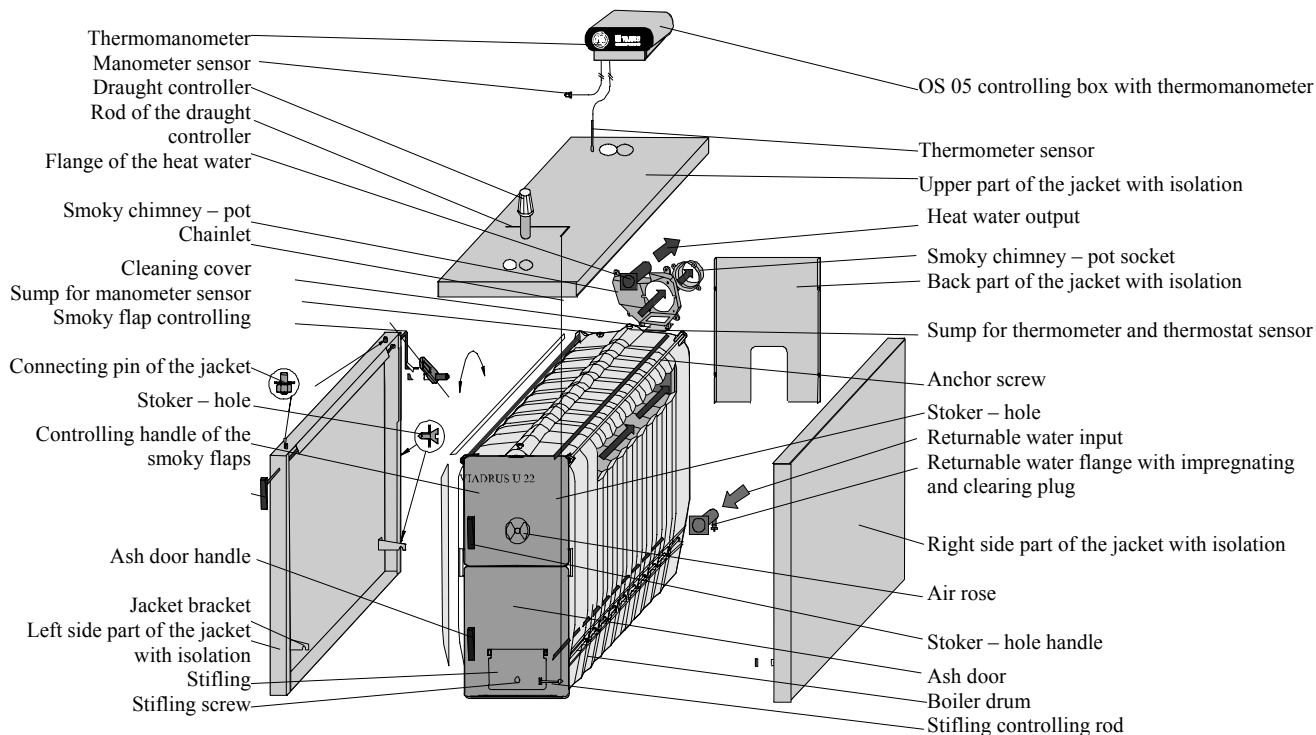


Pict. Nr.7 Jacket side part



Pict. Nr.8 Smoky flap control

4. Take out the isolation from the upper part of the jacket. Thermomanometer to be built – in to the control box and the aggregate to be screwed to the upper part of the jacket. Before putting on of the upper part of the jacket to the furnace it is necessary to put on the isolation back, insert the thermometer sensor to the thermometer sump and the manometer sensor to be screwed to the manometer sump.
5. To put on the back part of the jacket with isolation behind the screw – knobs.
6. To complete the smoky flap control according to the pic. Nr.8
7. To screw the brush to the shaft socket



Pict. Nr. 9 Boiler jacket design

Filling of the heat system with water:

Water for filling of the furnace and the heat system must be pure and colourless, without suspended substances, oil and chemically aggressive substances. Its hardness must correspond to ČSN 07 7401 and in case it does not correspond it is

necessary the water to be adjusted. Even multiplying heating of the water with higher hardness does not prevent from excluding of soils on the boiler drum walls. The precipitation of 1 mm of limestone reduces in the given place the heat transfer from metal to water by 10 %.

Heat systems with an open expansive tank allow direct contact of the heat water with atmosphere. In the heat period the expansive water in the tank absorbs oxygen that increases the rust effects and at the same time a considerable vaporization of water occurs. Only water adjusted to values according to ČSN 07 7401 can be used for fill – up. The heat system is needed to be rinsed so as all impurities have been washed out.

During heat period it is necessary to keep consistent water volume in the heat system. While filling – up of the heat system with water it is necessary to prevent the air from leeching onto the system. The water from furnace and heat system must never be impregnated or taken out for use except for cases necessarily needed such as repairs, etc. By draining the water and filling with new one the risk of rust and scale creation is increased. **If it is needed to fill water into the heat system we fill it only to a cooled down furnace to prevent section cracking.** After filling of the furnace and heat system checking of tightness of all joints is needed.

The finishing of assembly and the heat test performance must be recorded in the warranty card.

6. Putting into operation – instructions for a contractual service organization

Putting the furnace into operation can be performed only by a contractual service organization authorized for performing of this operation.

6.1 Control operation before starting

Before starting the furnace it is needed to check:

- a) filling the heat system with water (thermomanometer check) and system tightness
- b) connection to chimney – **this connection can be performed only with consent of a relevant chimney company according to ČSN 73 4210**

6.2 Putting the furnace into operation

1. Performance of fire in the furnace
2. Setting the furnace on the necessary operating temperature. The recommended temperature of the output water is 80 °C
3. Adjustment of the draught controller chainlet length (according to the enclosed draught controller instruction)
4. Operating of the furnace in the operating condition according to the competent standards.
5. Repeatedly check the furnace tightness
6. Introduction of the user with servicing
7. Making a record into the Warranty card

6.3 Furnace transformation from „solid fuels“ to „gas and liquid fuels“ and retroactively

In case the user decides according to the situation to perform a transformation of its furnace from solid fuels to gas or liquid fuels, such transformation can be required only at contractual service company – organization approved for performing the operation that provides him with performance of such transformation with an appropriate operating test. Parts for transformation are delivered by the producer.

7. User's furnace service

COKE, ANTHRACITE

The optimal fuel is coke with granularity of 40 – 60 mm but it is possible to burn even coke and anthracite with granularity of 20 – 40 mm (nut 2). In case of sufficient chimney draught

(0,15 to 0,25 mbar) it is possible to burn even non – caking anthracite with granularity of 30 – 50 mm (nut 1) and 50 – 80 mm (cobble)

WOOD

To reach the rated power of the furnace it is necessary to keep a maximum humidity at wood of 20 %.

Cleaning of the grate is performed so as the hot fuel would not get through to the ashtray.

The fuel needs to be stored in dry conditions.

Chart Nr. 9 Recommended dimensions of wooden logs

Section number	4	5	6	7	8	9	10
Log average [mm]	φ 40 to 100						
Log length [mm]	270	360	450	540	630	720	810

Other sorts of wood such as wood clips, wood shavings, sawdust, granules or coal – cakes can be used as additional fuel. In case of heating with smaller clogs (wood clips, wood shavings, sawdust, granules) it is necessary to put logs in the bottom part of the burning chamber so as the fuel would not get through to the ashtray. It is possible to reach smoother burning by further interlaying of the fuel.

These sorts of fuel must have heating power in the range of 12 to 15 MJ.kg⁻¹ and humidity to 20 % to prevent from reducing of the mentioned furnace power.

Heating up

1. Check the water volume in the heat system on the thermomanometer.
2. Open the closing armatures between the furnace and the heat system.
3. Clean out the grate, ashtray, smoky channels and furnace walls.
4. Spread out the kindling through the ash door with the stoker – hole on a cleaned grate along its entire depth.
5. Set the smoky flap in the chimney – pot to position – open and close the stoker door.
6. Set the kindling afire through open ash door and stoker door.
7. Close the stoker hole and ash door and fully open the stifling
8. Thinner layout of the basic fuel to be put up on the burning wood.
9. After its good burning up more fuel to be put up to the bottom part of the stoker hole, the fuel to be stacked to a uniform layout along its entire furnace depth.
10. As soon as the fuel grades to a dark red flame the air rose of the secondary air input on the stoker hole to be opened with an instrument.
11. After flames become yellow the air rose of the secondary air input to be closed.

Operation

1. After reaching the heat water temperature the burning air input to be adjusted. The furnace power in rough limits is regulated with a chimney draught change with a help of the smoky flap in the chimney – pot. Smooth power regulation is performed by a stifling by which the air output under the grate is regulated, either manually or with a help of draught controller. The draught controller to be adjusted so as the stifling in the ash door is almost closed at the time when the heat water required temperature is reached.
2. According to heat needs and burning intensity the furnace is needed to be supplied with fuel during the operation. Feeding the fire so as the fuel layout was equally high along the entire furnace depth.
3. When using the anthracite it is necessary the air rose of the secondary air input in the stoker hole to be partly opened for the whole time of the build – up of gases and flames out of freshly fed fuel (the air rose of the secondary air input with regard to the surface temperature is necessary to be controlled with an instrument).
4. At change over to night still operation the grate to be cleaned out, the freshly fuel to be let well burnt up and then the furnace power to be suppressed by throttling of the chimney draught with chimney flap in the chimney – pot and by turning down the air rose of the secondary air input. The smoky flap and air rose opening level is necessary to be tried out, it is always necessary to make sure that the product of consumption did not get away to the boiler room. In this case the draught controller to be disconnected.
5. The morning furnace operation reconditioning to be performed by opening of the smoky flap and air rose and with grate raking after opening the ash door.
6. The ash door must be during the operation permanently closed.
7. The ashtray to be emptied according to needs (gloves need to be used)

IMPORTANT NOTICE:

1. **The furnace must be operated only by adults who are introduced to these operating instructions. It is unallowable to let children at the furnace unattended of adults. Interventions into the furnace design that could threaten the health of the operating staff, eventually the inmates, are disallowed.**
2. **If there is a risk of rise and getting away of flammable steams or gas into the boiler room or at operations by which there is an intermediate risk of fire or blast (sticking of floor coverings, paintings with flammable colours), the furnace must be disabled from operation before the beginning of operations.**
3. **Using of flammable liquids is DISALLOWED for firing the VIADRUS U 22 C furnace.**
4. **It is DISALLOWED to overheat the furnace during its operation.**
5. **Objects of flammable materials must not be put on the furnace and to a distance smaller than that of a safety distance from it**
6. **Flammable materials must not be in the minimal distance of 1500 mm from the furnace when emptying the ash at the VIADRUS U 22 C furnace.**
7. **When the furnace operates at a lower temperature than of 60 °C the retting, or the so called low – temperature rust, of the boiler drum may occur that reduces the operating life of the boiler drum. Therefore we recommend to operate the furnace at a temperature of 60 °C or higher.**
8. **After finishing of the heating period it is necessary to properly clean the furnace, smoke stack and chimney – pot. The fulcrum pin, smoky flap mechanism and other movable parts to be covered with graphite grease. And the boiler room to be kept clean and dry.**

The list of contractual service organizations is enclosed separately.

8. Maintenance

1. The ash from the ashtray to be emptied during the operation of the furnace even several times per day according to the sort of used fuel because a full ashtray hampers the right distribution of the burning air under the fuel and causes unequal burning process of fuel on the grate. All remains in the firebox especially the clinker are removed before each new burning up and at morning furnace operation reconditioning. The ash is needed to be put away into the fire – resistant tanks with a cover. **It is necessary to use protective facilitations and to pay attention to personal safety while operating.**
2. The boiler walls inside the firebox, smoky furnace draughts and smoky chimney – pot to be cleaned 1x per month if heating with coke. The cleaning to be performed 1x per week when heating with anthracite.
3. If there is a settlement of tar silt on the walls of the burning space while using fuels with higher gas build – up it can be removed with a scraper or by burning out with a help of dry wood (eventually coke) when setting the furnace to the maximum operating temperature.

9. Instructions for product liquidation after its operating life

ŽDB GROUP a.s., KKCG Industry Group member is contractual partner of firm EKO – KOM a.s. with client number EK – F00060715.

The packages comply with ČSN EN 13427.

With respect to the fact that the product is designed out of common metal materials the individual parts are recommended to be liquidated in the following manner:

- exchanger (grey cast iron), by a company engaged in salvage and liquidation of waste
- tube distributions, jacketing, by a company engaged in salvage and liquidation of waste
- other metal parts, by a company engaged in salvage and liquidation of waste
- ROTAFLEX and IZOBREX sealing materials in common waste

The packing of the furnace is recommended to be liquidated in the following manner:

- sheet, cardboard packing and a wooden palette in common waste
- metal tightening tape, by a company engaged in salvage and liquidation of waste

In case that the product has lost its manufacture qualities there can be taken the advantage of product taking back (if this is established), in case that the originator has declared that this is a waste and it must be handled according to the valid legislation of the relevant country.

10. Warranty and defect liability

ŽDB GROUP, a. s., KKCG Industry Group member, Heating Technique Company VIADRUS grants a warranty:

- for furnaces for a period of 24 months from the date of sell to the end user
- for boiler drum for 5 years from the date of expedition from the manufacturing company

The user is obliged to leave the furnace installation to an assembly company, putting into operation and defect removing only to a professional contractual service accredited by the furnace producer ŽDB GROUP a.s., KKCG Industry Group member, Heating Technique Company VIADRUS otherwise the warranty for proper furnace operation is not valid.

If the furnace is operated according to the instructions mentioned in the “Instructions for the furnace operation and installation”, the furnace does not require any special professional service interventions.

“Certification of the quality and completeness of the VIADRUS U 22 furnace” serves for filling in by a contractual service organization as the ”Warranty card”.

For an eventual jacket reclamation is the customer obliged to submit a packing label of the boiler jacket. It is placed on the cardboard in which the jacket is expedited.

The user is obliged to perform a regular control of the furnace – see Chapter 8.

Failing to keep the mentioned instructions the warrants provided by the producer are not granted.

Each notice of defect must be made immediately after its finding always in written form and by a phone agreement.

The grant does not apply for:

- defects caused by a wrong assembly or incorrect operation of the product
- damage of the product during transfer or other mechanical damage
- defects caused by improper storage

The producer grants the right for changes performed within the frame of product innovation that may not be included in this instruction.

Information for customer

Packaging identification	Assessment reference
PE Plastic sacks, folie, corrugated board, iron and plastic fix line	

Identification od principal materials used. Paper, Polyethylene, iron, wood

Part 1: Summary of assessment

Standard/Report	Assessment requirement	Claim	Note
1.1 Prevention by source reduction		YES	
1.2 Heavy metals and	ensure below maximum permitted levels for components (CR 13695-1:2000)	YES	
1.3 Other noxious/hazardous substances	ensure in compliance with (CR 13695-2:2002, EN 13428:2000)	YES	
2 Reuse	ensure reusability in all terms of the standard for the functional packaging unit (EN 13429:2000)	NO	
3.1 Recovery by material recycling	ensure recyclability in all term sof the standard for the functional packaging unit (EN 13430:2000)	YES	
3.2 Recovery in the form of energy	ensure that calorific gain is achievable for the functional packaging unit (EN 13431:2000)	YES	Iron - NO
3.3 Recovery by composting	ensure compost ability in all terms of the standard for the functional packaging unit (EN 13432:2000)	NO	

NOTE Conformity with EN 13427 requires affirmative responses to sections 1.1; 1.2; 1.3 and to at least one of 3.1; 3.2; 3.3. In addition, where a claim of reuse is made section 2 should also record affirmative responses.
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Part 2: Statement of conformity

In the light of the assessment results recorded in part I above, this packaging is claimed to comply with the requirements of EN 13427:2000.
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ZÁVOD TOPENÁŘSKÁ TECHNIKA VIADRUS

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