



PRD

**FIRE RESEARCH CENTRE
PRODUCTS RESEARCH DIVISION****1. Introduction**

This classification report defines the classification assigned to the counterflow heat exchangers “ZERN HU-EX6 A B/C-x” and “ZERN HC-EX6 A B/C-x” in accordance with procedures given in LST EN 13501-1:2019.

**CLASSIFICATION OF REACTION TO FIRE
IN ACCORDANCE WITH LST EN 13501-1:2019**

Customer: LLC VENTILATION SYSTEMS
Kotsiubynskoho Mykhaila str. 1, UA-01054 Kyiv, Ukraine
Ph. +380 44 401 6250

Prepared by: Fire Research Centre
Miško str. 7, Valčiūnai vil., LT-13229 Vilnius distr., Lithuania

Product name: Counterflow heat exchangers “ZERN HU-EX6 A B/C-x” and
“ZERN HC-EX6 A B/C-x”

Classification report No.: 20-1.2025.24

Issue number: Exemplar No. 1 (*Classification Report was prepared only in English*).

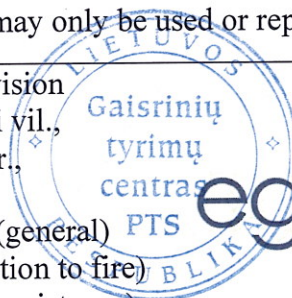
Date of issue: 27th of January 2025

Base: Contract of work performance No. 57-70(1GB/1KL) of 4th of December 2024.
Request, reg. No. 55-108/24

This classification report consists of three pages and may only be used or reproduced in its entirety.

Fire Research Centre
Miško str. 7, Valčiūnai vil.,
LT-13229 Vilnius distr.,
Lithuania
Ph. +370 5 249 1310
E-mail: gtc@vpgt.lt
<https://gtc.lrv.lt/en/>

Products Research Division
Miško str. 7, Valčiūnai vil.,
LT-13229 Vilnius distr.,
Lithuania
Ph.: +370 5 249 1317 (general)
+370 5 249 1315 (reaction to fire)
+370 5 249 1335 (fire resistance)



The European Group
of Organizations for Fire Testing
Inspection and Certification

2. Details of classified product

2.1 General

The product, “ZERN HU-EX6 A B/C-x” and “ZERN HC-EX6 A B/C-x”, is defined as the plastic counterflow heat exchanger.

2.2 Product description

In accordance with customer declaration the head plates, the side plates and the heat accumulation mass profiles of the counterflow heat exchangers “ZERN HU-EX6 A B/C-x” and “ZERN HC-EX6 A B/C-x” compose of the same components, which all are made from the same raw materials and difference between types HU-EX6, HC-EX6 are in geometry of monoblocs/heat accumulation mass profiles only, where:

ZERN – trademark.

HU-EX6, HC-EX6 – commercial group of monoblocs (heat accumulation mass profiles).

A – width, mm: 366/232.

B – height, mm: 366/172/230/232/271/312/394/477/533/815/959/1089.

C – depth, mm: 100 ÷ 600.

x – casing modification: 2 – plastic (HU-EX6 type), 2.1 – plastic with T-profile (HC-EX6 type).

Table 1 shows the heat exchanger components and their characteristics declared by the customer:

Table 1

Name of the heat exchanger component (colour)	Raw material	Nominal thickness, mm	Density, g/cm ³
Head plate (green)	Polystyrene “HI 425”, manufacturer Kumho Petrochemical Co., Ltd. (KKPC), Korea	2,0	1,03
Side plate (white)	Polystyrene “Edistir R 850E”, manufacturer	1,3	1,04
Corner (white)	Versalis S.p.A., Italy	1,3	
Heat accumulation mass profiles (ivory)	70 % Polystyrene “Styrolution PS ESCRimo”, manufacturer INEOS Styrolution Group GmbH, Germany	0,39	1,04
	30 % Flame Retardant Concentrate “FR2941PS EU”, manufacturer Alon Tavor I.Z, Israel		1,89
Hot melt glue (light yellow)	“Technomelt 134-135B”, manufacturer Henkel AG & Co. KGaA, Germany	- ⁽¹⁾	0,95 - 1,05

⁽¹⁾ – declared consumption of glue depending on dimensions of the heat exchanger:

130 g for (366×366×100) mm;

130 g ÷ 340 g for (366×366×100÷250) mm;

340 g ÷ 650 g for (366×366×250÷600) mm.

3. Reports and results in support of classification

3.1 Conditions

Components of the counterflow heat exchangers were sampled/specimens prepared by the customer.

3.2 Reports

Name of Laboratory	Name of sponsor	Report ref. no.	Test method and date Field of application rules and date
Fire Research Centre Products Research Division	LLC VENTILATION SYSTEMS	20-1.2025.5	LST EN ISO 11925-2:2020



3.2 Results

Test method	Parameter	No. tests	Results	
			Continuous parameter – mean (m)	Compliance with parameters
LST EN ISO 11925-2 Surface flame attack, flame exposition period 15 s	Fs≤150 mm within 20 s	12	Yes	Compliant
	Ignition of filter paper		No	Compliant
LST EN ISO 11925-2 Edge flame attack, flame exposition period 15 s	Fs≤150 mm within 20 s	12	Yes	Compliant
	Ignition of filter paper		No	Compliant
LST EN ISO 11925-2 Flame attack at the bottom edge of the specimen turned at 90° from its vertical axis Flame exposition period 15 s	Fs≤150 mm within 20 s	6	Yes	Compliant
	Ignition of filter paper		No	Compliant

4. Classification and field of application

4.1 Reference of classification

This classification has been carried out in accordance with LST EN 13501-1:2019 chapter 11.

4.2 Classification

The product, the counterflow heat exchangers “ZERN HU-EX6 A B/C-x” and “ZERN HC-EX6 A B/C-x”, in relation to its reaction to fire behaviour is classified:

E

The format of reaction to fire classification construction products excluding floorings and linear pipe thermal insulation products is:

Fire behaviour		Smoke production		Flaming droplets	
E	-	-	-	-	-

i.e. E

Reaction to fire classification: E

4.3 Field of application

This classification is valid only for in chapter 2.2 listed product parameters for any end use application.

5. Limitations

5.1 Restriction

The product classification is valid till 27th of January 2028.

5.2 Warning

This classification document does not represent type of approval or certification of the product.

Classification Report prepared by:

Chief Specialist
Aurelija Kindurienė



Classification Report approved by:

Chief Specialist
Andrejus Jefimovas