

Ημερίδα: Ενημέρωση κατασκευαστών ηλιακών θερμικών συστημάτων σε θέματα που αφορούν τον κλάδο

Προτεινόμενες αλλαγές στα πρότυπα ISO9806 και
EN12975-1

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Έκθεση στον ήλιο & thermal shock tests

Table 2 — Climate reference conditions for exposure test and thermal shock

Climate condition	Value for climate class				
	Class C Individual		Class B Sunny	Class A Very Sunny	Class A+ Extremely Sunny
Hemispherical solar irradiance on collector plane during minimum 32 hours (or 16 hours in case of half-exposure), G in W/m^2 minimum ambient temperature, ϑ_a in $^{\circ}C$ ^a	$G_x/\vartheta_{a,x}$		900/15	1000/20	1100/40
Irradiation on collector plane for exposure test during minimum 30 days, H in MJ/m^2	H_x		540	600	700
Irradiation on collector plane for half-exposure sequence during minimum 15 days, H in MJ/m^2	$H_x/2$		270	300	350
^a For thermal shock tests, the values can be understood as 1h average values.					

Διείσδυση βροχής

During the whole test procedure, the collector shall be shaded from light and shall be kept warm by circulating a hot fluid at $55^{\circ}C (\pm 5 K)$ through the absorber. Air heating collectors shall be left at ambient temperature without forced airflow. After stabilising under these conditions for at least 4 h, the collector is sprayed for 4 h. After the spraying, the collector shall remain shaded until final inspection.

Κατηγοριοποίηση συλλεκτών βάση υδραυλικού συστήματος

Collector class	Definition
Class 0	Low pressure collectors (PS < 0,5 bar over atmosphere) and all collectors that are not classified in another class listed in this table.
Class A1(F1)	Collectors made of one pipe (e.g. meander) which are not intended for generation of steam or super-heated water in the primary circuit using Group 1 fluids and $DN \leq 25$ mm
Class Ax1(F1)	Collectors made of one pipe (e.g. meander) which are not intended for generation of steam or super-heated water in the primary circuit using Group 1 fluids and $DN > 25$ mm
Class A1(F2)	Collectors made of one pipe (e.g. meander) which are not intended for generation of steam or super-heated water in the primary circuit using Group 2 fluids and $DN \leq 32$ mm
Class Ax1 (F2)	Collectors made of one pipe (e.g. meander) which are not intended for generation of steam or super-heated water in the primary circuit using Group 2 fluids and $DN > 32$ mm
Class A2(F1)	Collectors made of several pipes (e.g. harp) which are not intended for generation of steam or super-heated water in the primary circuit using Group 1 fluids and $PS \cdot V \leq 25$ bar·litres
Class Ax2(F1)	Collectors made of several pipes (e.g. harp) which are not intended for generation of steam or super-heated water in the primary circuit using Group 1 fluids and $PS \cdot V > 25$ bar·litres
Class A2(F2)	Collectors made of several pipes (e.g. harp) which are not intended for generation of steam or super-heated water in the primary circuit using Group 2 fluids and $PS \cdot V \leq 50$ bar·litres
Class Ax2(F2)	Collectors made of several pipes (e.g. harp) which are not intended for generation of steam or super-heated water in the primary circuit using Group 2 fluids and $PS \cdot V > 50$ bar·litres
Class B	Collectors intended for generation of steam or super-heated water in the primary circuit with $V > 2$ litres

Κατηγοριοποίηση συλλεκτών βάση της τοποθεσίας εγκατάστασής τους

Collector class	Definition
In Building	Συλλέκτες που προορίζονται να χρησιμοποιηθούν σαν μέρος του κελύφους του κτηρίου. (π.χ ενσωματωμένος σε κεκλιμένη οροφή)
On Building	Συλλέκτες που προορίζονται να εγκατασταθούν στο κτήριο και δεν θα χρησιμοποιηθούν σαν μέρος του κελύφους του κτηρίου. (π.χ συλλέκτες θερμικών συστημάτων νερού)
Off Building	Συλλέκτες που δεν προορίζονται για χρήση σε κτήριο (π.χ συλλέκτες σε σταθμούς ενέργειας ή θερμοκήπια)

Απαιτούμενες δοκιμές

Test	Definition
Fire safety	Reaction to fire: Collectors which cannot be classified without testing shall be tested according to EN 13501-1 applying the standards therein, as applicable. External fire performance: If required, collectors embedded in the roof shall be tested and classified in accordance with EN 13501-5.
Release of dangerous substances	National regulations on dangerous substances may require verification and declaration on release, and sometimes content, when construction products covered by this European Standard are placed on those markets. In the absence of European harmonized test methods, verification and declaration on release/content should be done taking into account national provisions in the place of use.
Electrical safety	If required, collectors co-generating or using electricity shall comply with the specific requirements of the applicable standards and regulations for such products.
Sound level	If applicable, the sound level shall be tested and the results shall be reported according to either ISO 3741-2:2010, EN ISO 3743-2:2009 or EN ISO 3747-2:2010.

Εάν ο συλλέκτης δοκιμάστηκε βάση των προηγούμενων εκδόσεων του προτύπου EN ISO 9806:2017, τότε ισχύει ο πιο κάτω πίνακας:

	ISO9806:2017	ISO9806:2013	EN12975-2:2006
Εσωτερική πίεση	Clause 6	Clause 6	Clause 5.2
Αντοχή σε θερμοκρασίες συμφόρησης	Clause 9	Clause 10a	Annex Ca
Έκθεση στον ήλιο	Clause 10	Clause 11b	Clause 5.4c
Εξωτερικό θερμικό πλήγμα	Clause 11	Clause 12b	Clause 5.5c
Εσωτερικό θερμικό πλήγμα	Clause 12	Clause 13b	Clause 5.6c
Διείσδυση βροχής	Clause 13	Clause 14	Clause 5.7
Μηχανική Αντοχή	Clause 15	Clause 16	Clause 5.9
Δοκιμή κρούσης	Clause 16	Clause 17	Clause 5.10
Απόδοση σε σταθερές συνθήκες, γωνία πρόσπτωσης, ωφέλιμη θερμοχωρητικότητα	Clause 19-26	Clause 20-27e	Clause 6e
Πτώση πίεσης	Clause 27	Clause 28	Clause 6.2.8
Τελικός έλεγχος	Clause 17	Clause 18	Clause 5.11
<p>a Round Result to the next higher multiple of 10°</p> <p>b Tests according to Class A, B, C are considered as Class A, B, C in EN ISO 9806:2017. Class A+ is not possible.</p> <p>c Tests are considered as Class B in EN ISO 9806:2017</p> <p>d Tests of heat pipe collectors according to EN ISO 9806:2013 and EN 12975-2:2013 cannot be transferred</p> <p>e Formula 12, Annex B and Annex G of EN ISO 9806:2017 shall be used to convert the thermal performance parameters into the format required in Table A.6 of the ISO 9806:2017.</p>			