Introduction into European Standard for Workers Exposed to Heat (1)

Competent and engaged in questions of heat protection ALWIT has been busy from the outset with technical requirements, testing and standardizing of heat protecting materials. Therefore ALWIT obviously took part also to European Standardizing works especially to develop the test methods and minimal requirements for such materials.

Protection for thermal risks of more than 100° C belongs to the personal protective equipment (PPE) of 3rd category of EC-directive 89/686.
Therefore each model has to be tested by a notified body and manufactured under a certified system for quality safety and control (e.g. ISO 9001); otherwise the type approval has to be renewed annual.

EN 531 contains the requirements for heat protective clothing for workers that are partially reproduced hereafter:

5.1 Sizing: EN 340

Size German / intern.	**Body height in cm**	**Chest girth in cm** (body measurement)	**Waist girth in cm** (body measurement)
42/44 / XS / 0	164 - 170	80 - 88	68 - 76
46/48 / S / 1	170 - 176	88 - 96	76 - 84
50/52 / M / 2	176 - 182	96 - 104	84 - 92
54/56 / L / 3	182 - 188	104 - 112	92 - 100
58/60 / XL / 4	182 - 188	112 - 120	100 - 108
62/64 / XXL / 5	188 - 194	120 - 128	108 - 116

In special cases other measurements are useful or even necessary, e.g. arm length, leg length.

6.2 Burning behaviour: EN 532

Level	**Afetrburn time (s)**	**Afterglow time (s)**	**Hole formation**	**Flaming debris**
A	≤ 2	≤ 2	Not allowed	Not allowed

6.3 Konvective heat: EN 367; heat flux density 80 kW/m²

Level	**Heat Transfer Index (HTI) = time to rise temperature of 24°C (s) min.**	**Heat Transfer Index (HTI) = time to rise temperature of 24°C (s) max.**
B1	3	6
B2	7	12
B3	13	20
B4	21	30
B5	31	

PPE (personal protective equipment) appropriate to protect against convective heat shall have a minimum level of B1.

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Introduction into European Standard for Workers Exposed to Heat (2)

6.4 Radiant Heat: EN 366; method B, heat flux density 20 kW/m²

Level	Time to reach t_2 (s) min.	Time to reach t_2 (s) max.
C1	8	30
C2	31	90
C3	91	150
C4	151	

PPE appropriate to protect against radiant heat shall have a minimum level of C1.

6.5 Molten Metal Splashes: EN 373 (Aluminium)

Level	Molten aluminium splashes Index (g) =mass producing a damage of PVC-film (skin simulant) min.	Molten aluminium splashes Index (g) =mass producing a damage of PVC-film (skin simulant) max.
D1	100	200
D2	201	350
D3	351	

PPE appropriate to protect against molten aluminium shall have a minimum level of D1.

6.6 Molten Metal Splashes: EN 373 (Iron)

Level	Molten iron splashes Index (g) =mass producing a damage of PVC-film (skin simulant) min.	Molten iron splashes Index (g) =mass producing a damage of PVC-film (skin simulant) max.
E1	60	120
E2	121	200
E3	201	

PPE appropriate to protect against molten iron shall have a minimum level of E1.

Of course heat protective clothing shall and can not meet all requiremets of the same level or in time.
PPE according to EN 531 shall meet the requirement of flame spread (code A) and at least one additional requirement (code B-E) in at least level 1.

Nevertheless ALWIT cares much about the selection of materials to reach high levels in all requirements as far as possible and even to exceed the minimum requirements of the highest level.That may be important for the pratical use; a lot of working places will require more than the highest level reached in the minimum time, mass etc.

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Introduction into European Standard for Workers Exposed to Heat (3)

7 Marking

PPE that meets the requirements of EN 531 is to be marked durable according to EN 340.

ALWIT marks heat protective clothing by a label containing:

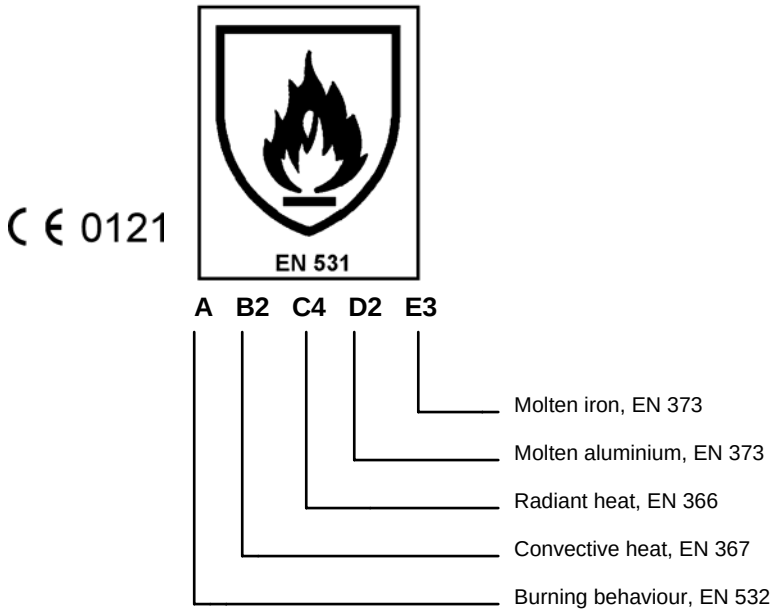
Logo, name and address of ALWIT
Type, article number
CE-sign with number of notified body and year
Size and/or length
Order number
Pictogram and tested levels
Care symbols

To print the order number is more than EN 531 and EN 340 require but needed to re-examinate the way of product under quality safety management..

Besides additional informations are required on the smallest packing unit and as separate product informations
for selection and use.
In order to make selection, storage and use easier for users ALWIT gives all above mentioned informations on both, label and smallest packing unit.

The pictogram is to be supplied by the level reached in the test.
A requirement that has not been tested shall be left out.

Example:



These informations are given by ALWIT team considering the present knowledge, and are not entitled being complete.

The statements of technical parameters are only basing on the results of laboratory testing, and cannot be simply transfered to practical applications.

If there are any further questions please do not hesitate to contact our stuff.

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