

Příloha 2 – Zdrojový kód 1 programu FDS

Zdrojový kód programu FDS

```
&HEAD CHID = 'zkouska_stredniho_rozmeru', TITLE = 'Reakce fasady MORE-CONNECT na ohen -
pozarni zkouska stredniho rozmeru/'
```

```
&TIME T_END = 1800 / ... délka simulace (sec)
```

```
&DUMP DT_RESTART = 60.0 /
```

```
MISC RESTART = .TRUE. /
```

```
***** výpočetní oblast + síť výpočetních objemů (buněk) *****
```

```
&MESH IJK = 12, 24, 7, XB = 0.0,0.6, 0.0,1.2, 0.0,0.35 /
```

výpočetní oblast dolní 1 - síť 50 mm ... 2 016 buněk

```
&MESH IJK = 5, 17, 12, XB = 0.35,0.6, 0.0,0.85, 0.35,0.95 /
```

výpočetní oblast střední 2 - síť 50 mm ... 1020 buněk

```
&MESH IJK = 35, 40, 60, XB = 0.0,0.35, 0.0,0.4, 0.35,0.95 /
```

výpočetní oblast střední 3 (delší) - síť 10 mm ... 84 000 buněk část 1

```
&MESH IJK = 35, 40, 60, XB = 0.0,0.35, 0.4,0.8, 0.35,0.95 /
```

výpočetní oblast střední 4 (delší) - síť 10 mm ... 84 000 buněk část 2

```
&MESH IJK = 35, 40, 60, XB = 0.0,0.35, 0.8,1.2, 0.35,0.95 /
```

výpočetní oblast střední 5 (delší) - síť 10 mm ... 84 000 buněk část 3

```
&MESH IJK = 25, 35, 60, XB = 0.35,0.6, 0.85,1.2, 0.35,0.95 /
```

výpočetní oblast střední 6 (kratší) - síť 10 mm ... 48 000 buněk

```
***** materiály (MESH 10 x 10) *****
```

```
*** omítka ETICS (omítka+fasádní izolace+dřevovláknitá deska) ***
```

```
&SURF ID = 'OMITKA+IZOLACE1+DREVOVLAKNO'
```

```
MATL_ID(1,1) = 'WEBER_AKRYLAT'
```

```
MATL_ID(2,1) = 'ISOVER_TF'
```

```
MATL_ID(3,1) = 'EGGER'
```

```
COLOR = 'GRAY'
```

```
THICKNESS(1:3) = 0.005,0.04,0.015/
```

```
*** omítka ETICS OBRÁCENÁ (dřevovláknitá deska+fasádní izolace+omítka) ***
```

```
&SURF ID = 'DREVOVLAKNO+IZOLACE1+OMITKA'
```

```
MATL_ID(1,1) = 'EGGER'
```

```
MATL_ID(2,1) = 'ISOVER_TF'
```

```
MATL_ID(3,1) = 'WEBER_AKRYLAT'
```

```
COLOR = 'GRAY'
```

```
THICKNESS(1:3) = 0.015,0.04,0.005/
```

```
&MATL ID = 'WEBER_AKRYLAT'
```

```
DENSITY = 1700.
```

```
CONDUCTIVITY = 0.75
```

```
SPECIFIC_HEAT = 0.92 /
```

```
&MATL ID = 'ISOVER_TF'
```

```
DENSITY = 140.
```

```
CONDUCTIVITY = 0.036
```

```
SPECIFIC_HEAT = 0.8 /
```

&MATL ID = 'EGGER'		&SURF ID = 'IZOLACE2'	
DENSITY	= 600.	MATL_ID	= 'ISOVER_TF'
CONDUCTIVITY	= 0.1	COLOR	= 'GREEN'
SPECIFIC_HEAT	= 1.63 /	THICKNESS	= 0.12 /
*** izolace fasádní (minerální vlákno) ***		*** cementovláknitá deska ***	
&SURF ID = 'IZOLACE1'		&SURF ID = 'CEMENTOVFLAKNO'	
MATL_ID	= 'ISOVER_TF'	MATL_ID	= 'FARMACELL'
COLOR	= 'GRAY'	COLOR	= 'ORCHID'
THICKNESS	= 0.04 /	TRANSPARENCY	= 0.5
*** omítka ETICS ***		THICKNESS	= 0.01 /
&SURF ID = 'OMITKA'		&MATL ID = 'FARMACELL'	
MATL_ID	= 'WEBER_AKRYLAT'	DENSITY	= 1000.
COLOR	= 'GRAY'	CONDUCTIVITY	= 0.173
THICKNESS	= 0.005 /	SPECIFIC_HEAT	= 1.0 /
*** dřevěný rám KVH ***		*** izolace měkká (skelná vata) ***	
&SURF ID = 'DREVO'		&SURF ID = 'IZOLACE3'	
MATL_ID	= 'KVH'	MATL_ID	= 'ISOVER_UNIROL'
COLOR	= 'BROWN'	COLOR	= 'YELLOW'
THICKNESS	= 0.12 /	TRANSPARENCY	= 0.3
&MATL ID = 'KVH'		THICKNESS	= 0.12 /
DENSITY	= 600.	&MATL ID = 'ISOVER_UNIROL'	
CONDUCTIVITY	= 0.22	DENSITY	= 21.
SPECIFIC_HEAT	= 2.51 /	CONDUCTIVITY	= 0.033
*** izolace tvrdší (minerální vlákno) ***		SPECIFIC_HEAT	= 0.84 /

NAVÍC (PRŮHLEDNOST)

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***** plochy na hranici výpočetní oblasti (kromě MC PANELU) *****

&VENT XB = 0.31,0.6, 0.0,0.0, 0.0,0.95, SURF_ID = 'OPEN' /	oblast 1 (bok levý vysoký)
&VENT XB = 0.0,0.31, 0.0,0.0, 0.0,0.4, SURF_ID = 'OPEN' /	oblast 2 (bok levý pod panelem)
&VENT XB = 0.6,0.6, 0.0,0.89, 0.0,0.95, SURF_ID = 'OPEN' /	oblast 3 (přední část vysoká)
&VENT XB = 0.6,0.6, 0.89,1.2, 0.0,0.4, SURF_ID = 'OPEN' /	oblast 4 (přední část pod panel)
&VENT XB = 0.0,0.6, 1.2,1.2, 0.0,0.95, SURF_ID = 'INERT' /	oblast 5 (bok pravý Powerpanel)
&VENT XB = 0.0,0.0, 0.0,1.2, 0.0,0.95, SURF_ID = 'INERT' /	oblast 6 (zadní část Powerpanel)
&VENT XB = 0.31,0.6, 0.0,0.89, 0.95,0.95, SURF_ID = 'OPEN' /	oblast 7 (strop)
&VENT XB = 0.0,0.6, 0.0,1.2, 0.0,0.0, SURF_ID = 'INERT' /	oblast 8 (podlaha)

***** MORE-CONNECT PANEL - detailní část (MESH 10 x 10) *****

*** omítka ETICS ***

&OBST XB = 0.0,0.31, 0.0,1.2, 0.4,0.46, SURF_ID6 = 'IZOLACE1','OMITKA','OMITKA','IZOLACE1','OMITKA+IZOLACE1+DREVOVLAKNO','DREVOVLA KNO+IZOLACE1+OMITKA' /	spodní delší (horizontální)	a1
&OBST XB = 0.31,0.6, 0.89,1.2, 0.4,0.46, SURF_ID6 = 'IZOLACE1','IZOLACE1','OMITKA','IZOLACE1','OMITKA+IZOLACE1+DREVOVLAKNO','DREVOVL AKNO+IZOLACE1+OMITKA' /	spodní kratší (horizontální)	b1
&OBST XB = 0.0,0.25, 0.0,0.06, 0.46,0.95, SURF_ID6 = 'IZOLACE1','IZOLACE1','OMITKA+IZOLACE1+DREVOVLAKNO','DREVOVLAKNO+IZOLACE1+O MITKA','IZOLACE1','IZOLACE1' /	boční levá (vertikální)	c1
&OBST XB = 0.25,0.31, 0.0,1.080, 0.46,0.95, SURF_ID6 = 'DREVOVLAKNO+IZOLACE1+OMITKA','OMITKA+IZOLACE1+DREVOVLAKNO','OMITKA','IZOLA CE1','IZOLACE1','IZOLACE1' /	pohledová levá (vertikální)	d1
&OBST XB = 0.31,0.6, 0.89,0.95, 0.46,0.95, SURF_ID6 = 'IZOLACE1','IZOLACE1','OMITKA+IZOLACE1+DREVOVLAKNO','DREVOVLAKNO+IZOLACE1+O MITKA','IZOLACE1','IZOLACE1' /	boční levá (vertikální)	e1

*** dřevěný rám KVH ***

&OBST XB = 0.13,0.25, 0.06,1.08, 0.46,0.52, SURF_ID = 'DREVO' /	spodní delší (horizontální)	T1
&OBST XB = 0.31,0.6, 0.95,1.07, 0.46,0.52, SURF_ID = 'DREVO' /	spodní kratší (horizontální)	T2
&OBST XB = 0.13,0.25, 0.06,0.12, 0.52,0.95, SURF_ID = 'DREVO' /	trámek 3 (vertikální)	T3
&OBST XB = 0.13,0.25, 0.66,0.72, 0.52,0.95, SURF_ID = 'DREVO' /	trámek 4 (vertikální)	T4
&OBST XB = 0.13,0.25, 1.02,1.08, 0.52,0.95, SURF_ID = 'DREVO' /	trámek 5 (vertikální)	T5
&OBST XB = 0.31,0.37, 0.95,1.07, 0.52,0.95, SURF_ID = 'DREVO' /	trámek 6 (vertikální)	T6

*** izolace tvrdší (minerální vlákno) ***

&OBST XB = 0.13,0.25, 0.12,0.66, 0.52,0.95, SURF_ID = 'IZOLACE2' /	tvrdá izolace	IZ1
&OBST XB = 0.13,0.25, 0.72,1.02, 0.52,0.95, SURF_ID = 'IZOLACE2' /	tvrdá izolace	IZ2
&OBST XB = 0.37,0.6, 0.95,1.07, 0.52,0.95, SURF_ID = 'IZOLACE2' /	tvrdá izolace	IZ3

*** sádrovláknitá deska ***

&OBST XB = 0.12,0.13, 0.06,1.08, 0.46,0.95, SURF_ID = 'CEMENTOVLAKNO' /	pohledová deska	a2
&OBST XB = 0.31,0.6, 1.07,1.08, 0.46,0.95, SURF_ID = 'CEMENTOVLAKNO' /	pohledová deska	b2

*** izolace měkká (skelná vata) ***

&OBST XB = 0.0,0.12, 0.06,1.2, 0.46,0.95, SURF_ID = 'IZOLACE3' /	měkká izolace	IZ4
&OBST XB = 0.12,0.6, 1.08,1.2, 0.46,0.95, SURF_ID = 'IZOLACE3' /	měkká izolace	IZ5

*** otevřené průduchy (pomocí HOLE) ***

&HOLE XB = 0.01,0.11, 0.13,0.23, 0.46,0.95 /	průduch	Pr1
&HOLE XB = 0.01,0.11, 0.25,0.35, 0.46,0.95 /	průduch	Pr2

&HOLE XB = 0.01,0.11, 0.37,0.47, 0.46,0.95 /	průduch	Pr3	&DEVC XYZ = 0.31,0.69,0.9, QUANTITY = 'WALL TEMPERATURE', IOR=1, ID = 'WT_20' /
&HOLE XB = 0.01,0.11, 0.49,0.59, 0.46,0.95 /	průduch	Pr4	&DEVC XYZ = 0.31,0.74,0.9, QUANTITY = 'WALL TEMPERATURE', IOR=1, ID = 'WT_12' /
***** propanový hořák *****			&PROP ID = 'TC_12mm', BEAD_DIAMETER = 0.03 / průměr termočlánků
&SURF ID = 'FIRE', HRRPUA = 833.333 / 100 kW zdroj (1,2, x 0,1 m = 0,12 m2) ... 100 / 0,12 = 833,3kW/m2			&PROP ID = 'TC_INSIDE', BEAD_DIAMETER = 0.0015 /
&VENT XB = 0.0,0.1, 0.0,1.2, 0.15,0.15, SURF_ID = 'FIRE', COLOR = 'BLACK' /			** termočlánky (vnitřní) **
&OBST XB = 0.0,0.1, 0.0,1.2, 0.0,0.15, COLOR = 'RED', SURF_ID = 'INERT' /			&DEVC XYZ = 0.31,0.69,0.9, QUANTITY = 'INSIDE WALL TEMPERATURE', DEPTH = 0.0049, IOR=1, ID = 'TC_21' /
&REAC ID = 'PROPANE'			&DEVC XYZ = 0.31,0.69,0.9, QUANTITY = 'INSIDE WALL TEMPERATURE', DEPTH = 0.0449, IOR=1, ID = 'TC_1' /
FUEL = 'PROPANE'			&DEVC XYZ = 0.31,0.69,0.9, QUANTITY = 'INSIDE WALL TEMPERATURE', DEPTH = 0.0599, IOR=1, ID = 'TC_2' /
C=3.			&DEVC XYZ = 0.19,0.69,0.4, QUANTITY = 'INSIDE WALL TEMPERATURE', DEPTH = 0.0049, IOR=-3, ID = 'TC_26' /
H=8.			&DEVC XYZ = 0.19,0.69,0.4, QUANTITY = 'INSIDE WALL TEMPERATURE', DEPTH = 0.0449, IOR=-3, ID = 'TC_27' /
SOOT_YIELD = 0.024 / palivo propan			&DEVC XYZ = 0.19,0.69,0.4, QUANTITY = 'INSIDE WALL TEMPERATURE', DEPTH = 0.0599, IOR=-3, ID = 'TC_28' /
***** simulované veličiny *****			
*** termočlánky - bodové měření teplot (°C) ***			
** termočlánky (vnější) **			** termočlánky v potrubí (vnitřní) **
&DEVC XYZ = 0.31,0.14,0.9, QUANTITY = 'THERMOCOUPLE', PROP_ID = 'TC_12mm', ID = 'TC_10' /			&DEVC XYZ = 0.06,0.18,0.9, QUANTITY = 'THERMOCOUPLE', ID = 'TC_6' /
&DEVC XYZ = 0.31,0.44,0.9, QUANTITY = 'THERMOCOUPLE', PROP_ID = 'TC_12mm', ID = 'TC_11' /			&DEVC XYZ = 0.06,0.3,0.9, QUANTITY = 'THERMOCOUPLE', ID = 'TC_7' /
&DEVC XYZ = 0.31,0.69,0.9, QUANTITY = 'THERMOCOUPLE', PROP_ID = 'TC_12mm', ID = 'TC_20' /			&DEVC XYZ = 0.06,0.42,0.9, QUANTITY = 'THERMOCOUPLE', ID = 'TC_8' /
&DEVC XYZ = 0.31,0.74,0.9, QUANTITY = 'THERMOCOUPLE', PROP_ID = 'TC_12mm', ID = 'TC_12' /			&DEVC XYZ = 0.06,0.54,0.9, QUANTITY = 'THERMOCOUPLE', ID = 'TC_9' /
&DEVC XYZ = 0.46,0.89,0.9, QUANTITY = 'THERMOCOUPLE', PROP_ID = 'TC_12mm', ID = 'TC_16' /			&DEVC XYZ = 0.06,0.18,0.54, QUANTITY = 'THERMOCOUPLE', ID = 'TC_22' /
&DEVC XYZ = 0.31,0.14,0.9, QUANTITY = 'WALL TEMPERATURE', IOR=1, ID = 'WT_10' /			&DEVC XYZ = 0.06,0.3,0.54, QUANTITY = 'THERMOCOUPLE', ID = 'TC_23' /
&DEVC XYZ = 0.31,0.44,0.9, QUANTITY = 'WALL TEMPERATURE', IOR=1, ID = 'WT_11' /			

&DEVC XYZ = 0.06,0.42,0.54, QUANTITY = 'THERMOCOUPLE', ID = 'TC_24' /

&DEVC XYZ = 0.06,0.54,0.54, QUANTITY = 'THERMOCOUPLE', ID = 'TC_25' /

*** profily ***

&PROF XYZ = 0.31,0.69,0.9, QUANTITY = 'TEMPERATURE', IOR=1, ID = 'PROF_1' / TEPLOTA
PŘES PRVEK

&PROF XYZ = 0.30,0.69,0.9, QUANTITY = 'TEMPERATURE', IOR=1, ID = 'PROF_2' / TEPLOTA
PŘES PRVEK

&PROF XYZ = 0.19,0.69,0.40, QUANTITY = 'TEMPERATURE', IOR=-3, ID = 'PROF_3' / TEPLOTA
PŘES PRVEK

*** barevné iso-plochy (SLICEFile) ... teplotní pole ***

&SLCF PBX = 0.06, QUANTITY = 'TEMPERATURE', VECTOR = .TRUE./

&SLCF PBX = 0.06, QUANTITY = 'VELOCITY', VECTOR = .TRUE./

&SLCF PBY = 0.54, QUANTITY = 'TEMPERATURE', VECTOR = .TRUE./

&SLCF PBY = 0.54, QUANTITY = 'VELOCITY', VECTOR = .TRUE./

&SLCF PBZ = 0.40, QUANTITY = 'TEMPERATURE', VECTOR = .TRUE./

*** hodnoty na hranici výpočetní oblasti ***

&BNDF QUANTITY = 'GAUGE HEAT FLUX' / ... BNDF = boundary file

&BNDF QUANTITY = 'WALL TEMPERATURE' /

&TAIL / ... konec simulaceg