

**WP4 Qualification and accreditation of  
independent experts  
and  
quality assurance  
in Slovenia**

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**Meeting in Berlin 17 Jan. 2006**

# Done by Jan. 2006

- ❑ Invitation to training course - Collection of interest for participation in the seminar (9 experts expressed interest)
- ❑ Guidelines – list of refurbishment measures...
- ❑ Accreditation scheme – discussion with ministry started in Dec. 2005
- ❑ Implementation procedures and quality assurance: two successful schemes were studied:
  - ❑ energy advisory network (quality control, approval) and
  - ❑ real estate managers scheme (approval, data base of certificates)

# D) Accreditation scheme for independent experts

## Approved organizations for inspections and surveys

Not defined yet – considered:

### **New buildings – design certificates:**

Planning companies employing authorized engineers (Chamber of engineers)

### **Existing buildings – certificates (asset rating):**

Approved expert (by the ministry) that will


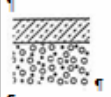

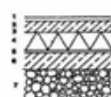
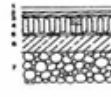
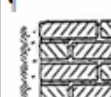
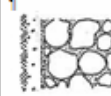
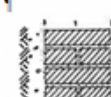
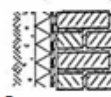

- prove adequate formal professional education (engineer, architect, energy advisor)
- attend the training course
- pass the state exam for certification of buildings

Approved engineer must be formally employed (insurance...)

### **Inspection of boilers – already in place, minor EPBD upgrade in 2006:**


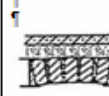
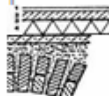
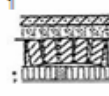
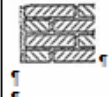
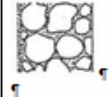


Chimney sweeping organizations with trained chimney sweepers

## OBSTOJEČE STAVBE – IZBOLJŠAVE NA OVOJU

<1920		OBSTOJEČE		SANACIJA
		$U(W/m^2K)$		$U_{\text{zunanjske stene}}$ $U_{\text{stropovodst}}$ $U(W/m^2K)$
<b>Tla-na-terenu</b>				
 	Betonski tlak, 30-cm z ali brez estriha $\rightarrow U=2.6$	 	Betonski tlak, bit-Hidroizolacija, penjeni polistiren, PE folija, betonski estrih, obloga $\rightarrow 8\text{-cm-TL, } U=0.44$ $\rightarrow 10\text{-cm-TL, } U=0.36$	
	Podložni beton, nasutje, slepi – leseni pod, 30-cm $\rightarrow U=1.5$		Podložni beton, izravnava, bit-Hidroizolacija, mineralna volna med lesenimi letvami, PE folija, slepi pod $\rightarrow 8\text{-cm-TL, } U=0.44$ $\rightarrow 10\text{-cm-TL, } U=0.36$	
<b>Stena-proti-terenu</b>				
 	Polna opeka, 25–51-cm omet $\rightarrow U=2.0–1.2$	  	Polna opeka 38, hidroizolacija zunan, mineralna volna notri, parna zapora, kat. mav. plošče, drenaža – odkop, zasipanje $\rightarrow 3\text{-cm-TL, } U=0.61$ $\rightarrow 10\text{-cm-TL, } U=0.28$	
	Naravnikamen z ali brez ometa, 50–150-cm $\rightarrow U=2.7–1.1$		Polna opeka 38, hidroizolacija zunan, ekstrudiran polistiren, drenaža – odkop, zasipanje $\rightarrow 3\text{-cm-TL, } U=0.61$ $\rightarrow 10\text{-cm-TL, } U=0.28$	
			Naravnikamen 50, bitumen skotrak, penjeni polistiren notri, parna zapora, MK obloga $\rightarrow 3\text{-cm-TL, } U=0.68$ $\rightarrow 10\text{-cm-TL, } U=0.29$	

BUDI – Grad. guideline for ZRMK training seminar for energy certification experts – Jan 2008

## OBSTOJEČE STAVBE – IZBOLJŠAVE NA OVOJU

Strop nad neogrevano kletjo			
 	Opečni obok, nasutje, bet. Estrih, leseni pod, 30–50-cm $\rightarrow U=1.0–0.9$	 	Dodamo Ti zgoraj Opečni obok, nasutje, mineralna volna, PE folija, estrih, leseni pod $\rightarrow 3\text{-cm-TL, } U=0.47$ $\rightarrow 10\text{-cm-TL, } U=0.28$
	Opečni svodasti obok z jeklenimi nosilci, bet. Estrih, leseni pod, 25–35-cm $\rightarrow U=1.0–0.9$		Dodamo Ti spodaj Opečni svodasti obok z jeklenimi nosilci, mineralna volna, PE folija, bet. Estrih, leseni pod $\rightarrow 3\text{-cm-TL, } U=0.47$ $\rightarrow 10\text{-cm-TL, } U=0.28$
<b>Zunanja stena</b>			
 	Polna opeka, omet, 29–68 $\rightarrow U=0.9–1.9$	 	Polna opeka 38, toplotna izolacija notri, parna zapora, obloga iz MK plošč $\rightarrow 4\text{-cm-TL, } U=0.59$ $\rightarrow 10\text{-cm-TL, } U=0.27$
	Naravnikamen z ali brez ometa, 50–150-cm $\rightarrow U=2.4–1.1$		Naravnikamen 50, apneni omet, bit-Trak, penjeni polistiren, PE folija, MK plošča $\rightarrow 4\text{-cm-TL, } U=0.59$ $\rightarrow 12\text{-cm-TL, } U=0.27$
	Stena iz lesenih trampičev, 14–20-cm $\rightarrow U=0.8–0.6$		Smrekova bruna 14, smrekov opak, parna zapora, mineralna volna, prežračevani sloj, fasadna obloga $\rightarrow 4\text{-cm-TL, } U=0.43$ $\rightarrow 10\text{-cm-TL, } U=0.26$

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**Gradbeni inštitut ZRMK**

**Thank you for your attention!**



ISO 9001: 2000  
Q-612