

COST Action TU 904

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EXAMINATION, ASSESSMENT AND REPAIR OF FIRE DAMAGED RC STRUCTURE OF „REFINERY-OKTA“ IN SKOPJE

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VIEW OF THE FIRED STRUCTURE
Schematic presentation of the fired structure

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1. VISUAL INSPECTION OF STRUCTURE

change of concrete color;
fissures and cracks inside the concrete mass;
cracks along main reinforcement.

Change of color and structure of reinforcement of concrete beam because of the restrained flexure color indicate temperature increase 200°C, 300°C, 400°C, 500°C, 600°C.

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2. Experimental determination of the residual concrete strength

The specimen were taken without the destruction of reinforcement and were tested at the Testing laboratory of the Faculty of Civil Engineering in Skopje

Before testing all the specimens were divided in two slices. The deteriorated (burned) slices had small height (3-6 cm) and rough surface

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TESTING EQUIPEMENT

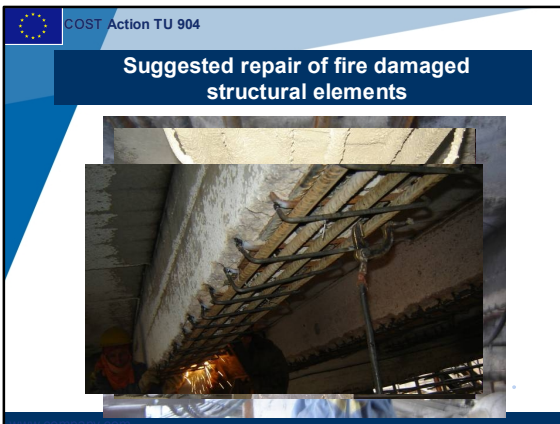
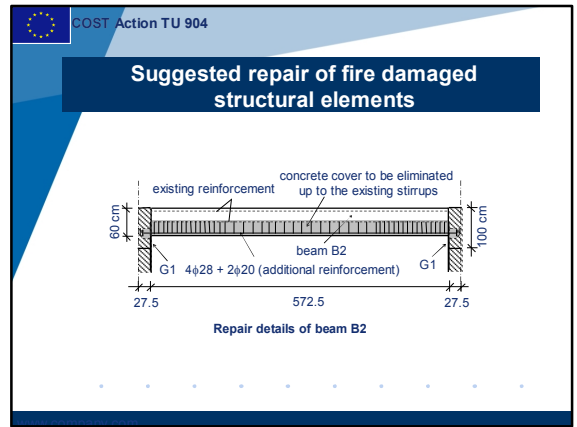
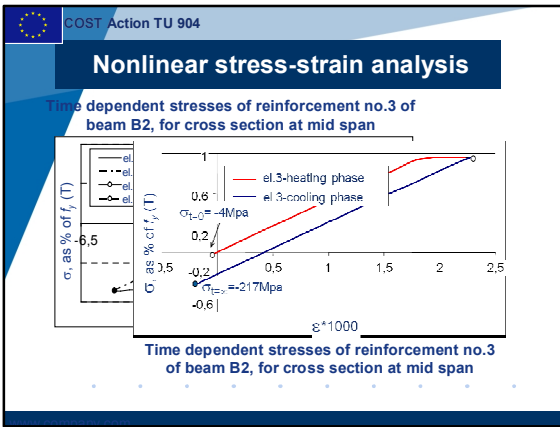
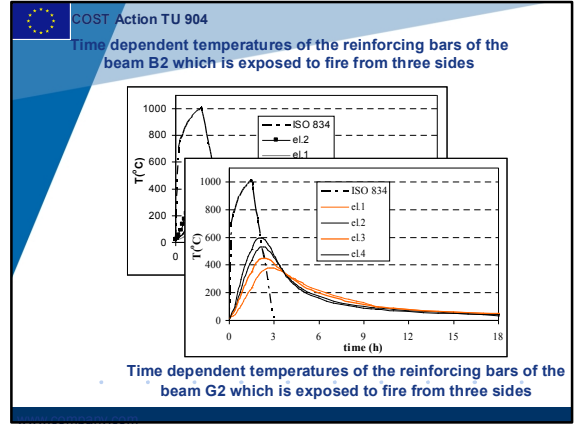
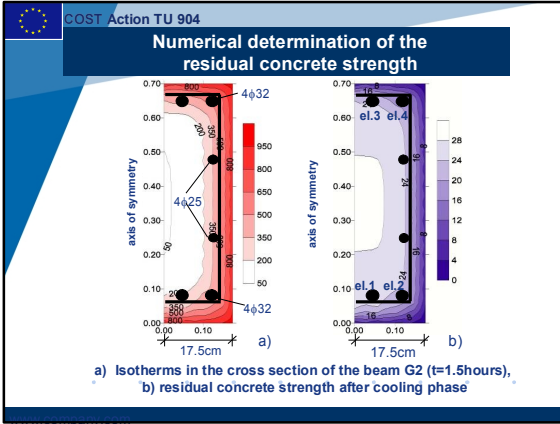
Position	ϕ (cm)	h (cm)	V (cm ³)	G	γ (KN/m ³)	f_c (MPa)
G-1	9.4	8.4	582.62	1278.85	21.95	28.4
G-2	9.4	10.3	714.41	1582.7	22.15	32.8
PGd	9.4	10.55	731.75	1672.8	22.86	26.2
PGg	9.4	10.87	735.94	1742.5	23.11	30.1

Results of strength tests on samples that were not exposed to fire
Average strength of concrete exposed to fire was 9,24 MPa

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Numerical determination of the residual concrete strength

a) Isotherms in the cross section of the beam B2 (t=1.5hours),
b) residual concrete strength after cooling phase



THANK YOU FOR THE ATTENTION