

Considerations for fostering a joint approach of mine rescue organisations and fire brigades for effective rescue operations in underground spaces



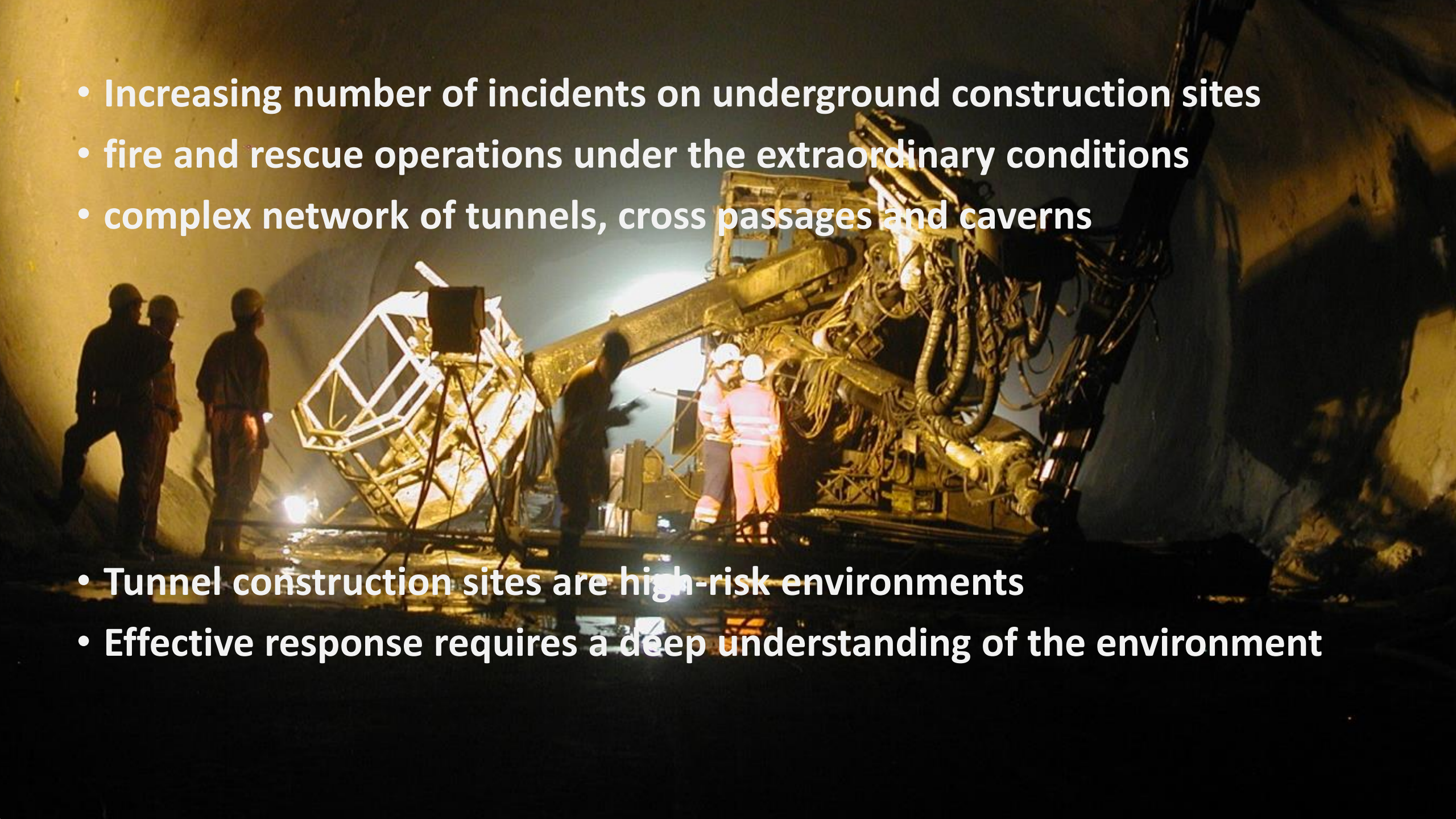
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ITA-AITES



The best place to work...

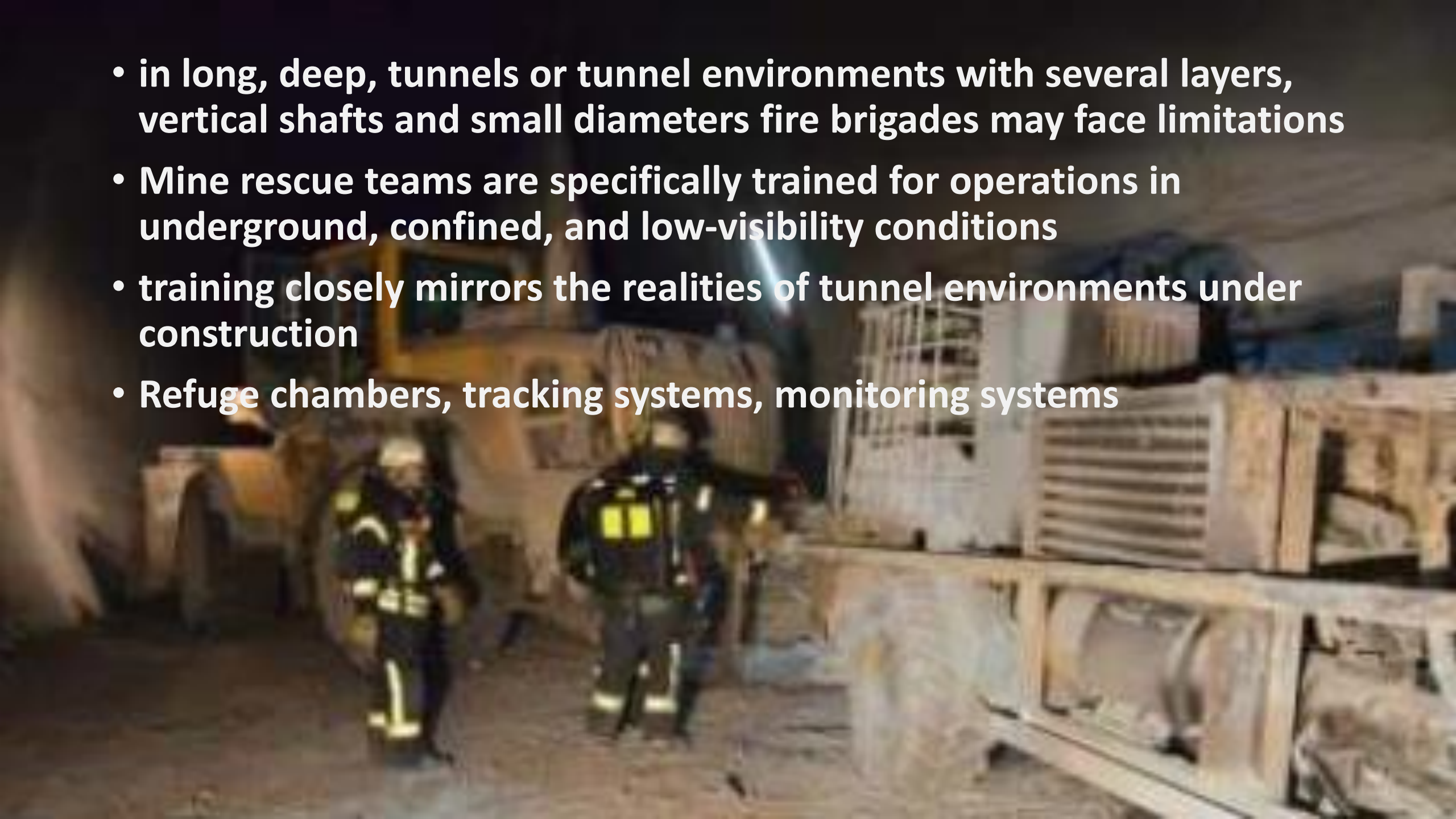
- Increasing number of incidents on underground construction sites
- fire and rescue operations under the extraordinary conditions
- complex network of tunnels, cross passages and caverns



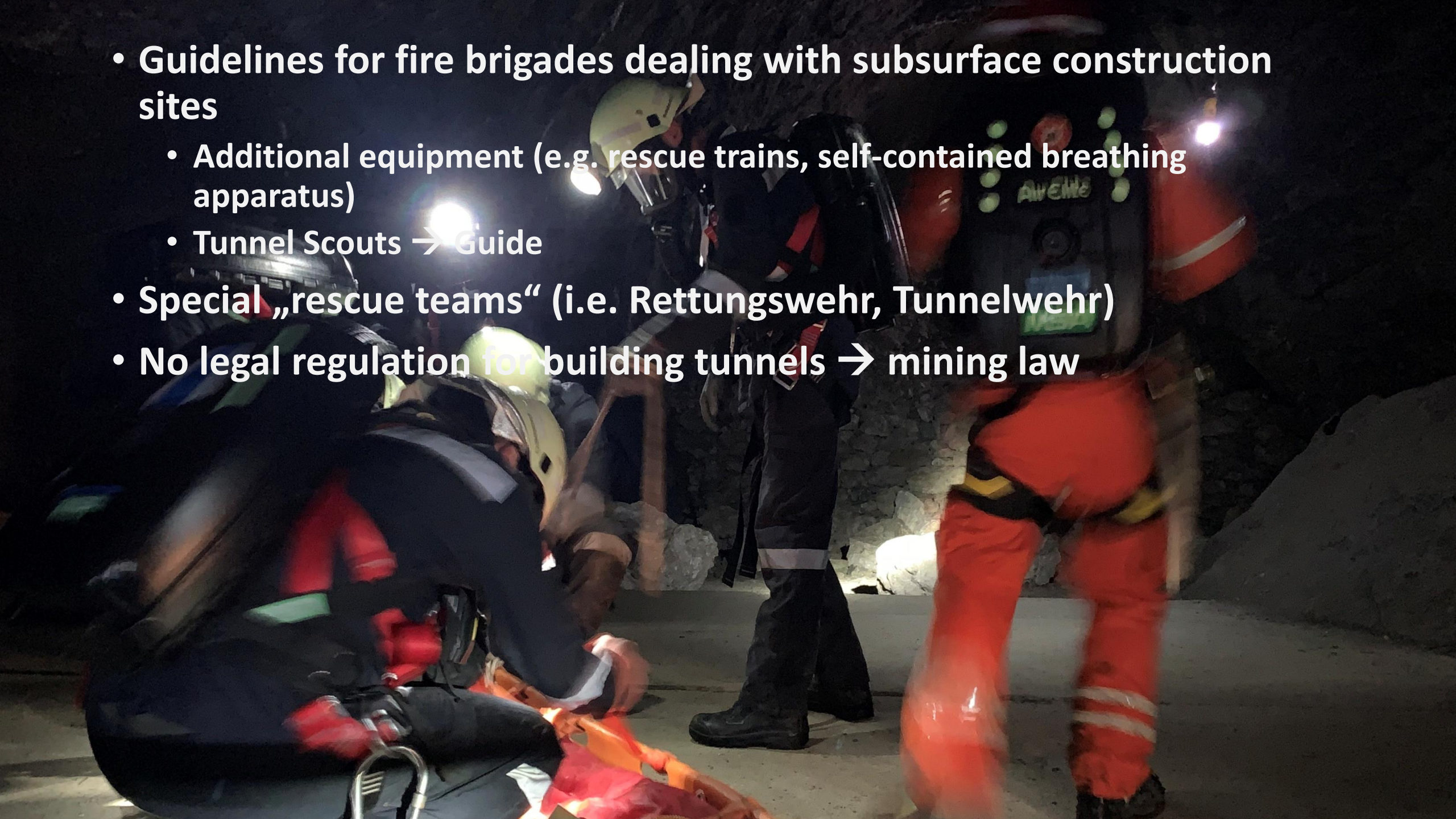
- Tunnel construction sites are high-risk environments
- Effective response requires a deep understanding of the environment

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- A group of firefighters in a tunnel, wearing helmets and uniforms, working together. One firefighter in the foreground is wearing a dark uniform with "FEUERWEHR" and "LIEFER" visible on the back. Another firefighter in the center is wearing a red uniform. The scene is dimly lit, with a yellowish light source. The background shows the curved walls of the tunnel and some equipment.
- structural fire suppression and often serve as the first responders
 - life saving operations and fire containment
 - high-capacity water delivery systems, heavy lifting equipment, ventilation tools
 - rapid interventions

- in long, deep, tunnels or tunnel environments with several layers, vertical shafts and small diameters fire brigades may face limitations
- Mine rescue teams are specifically trained for operations in underground, confined, and low-visibility conditions
- training closely mirrors the realities of tunnel environments under construction
- Refuge chambers, tracking systems, monitoring systems



- Guidelines for fire brigades dealing with subsurface construction sites
 - Additional equipment (e.g. rescue trains, self-contained breathing apparatus)
 - Tunnel Scouts → Guide
- Special „rescue teams“ (i.e. Rettungswehr, Tunnelwehr)
- No legal regulation for building tunnels → mining law



- Which Training Standards do we follow?
- Firefighting SOP
- Mine Rescue SOP
- Mountain Rescue Techniques
- INSARAG Guidelines



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- A photograph showing a training exercise in a simulated industrial or construction environment. Two firefighters in full turnout gear, including helmets and jackets, are attending to a man lying on an orange stretcher. The man is wearing a high-visibility yellow vest over a dark shirt and a yellow helmet. A red blanket is partially covering him. The scene is set on a metal platform with various industrial structures, including yellow support beams and a chain-link fence in the background. The overall atmosphere is one of a controlled emergency response drill.
- Emergency responders must cultivate cross-disciplinary training
 - Scenario-based simulations
 - Interoperability
 - Regular Site Inspections

A possible joint approach

- different traditions and legal background
- operations may converge in the field of fires or other complex rescue operations on subsurface construction sites

- understanding each other's roles, sharing expertise
- improve the safety and effectiveness of response operations in complex subterranean settings



A photograph of two firefighters in full protective gear working inside a structure that is heavily on fire. The scene is filled with intense orange and yellow flames, particularly concentrated in a large opening in the background. The firefighters are silhouetted against the bright light of the fire. The overall atmosphere is one of a high-stakes emergency response.

Glück Auf!