



Occupational Health and Safety Education

Occupational Health and Safety Education

Personal and material conditions of work:

Personal conditions

- Occupational medical examinations
- Qualifications
- Suitable working condition



Material conditions

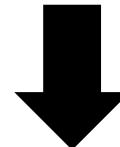
- Safety of the machines, tools, PPE
- Commissioning
- Maintenance

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The employee is obliged to appear and maintain the suitable working condition during work.

Suitable working condition:

- Relaxed,
- Healthy,
- Free from influenced status
 - Psychotropic: drug, pills, alcohol 0%.



Alcohol breath test control

Accidents, injuries, illness, and malfunction have to be reported to your supervisor immediately!

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Pictograms:

Szin	Alak	Jelentés	A jel színe
Red	Red square with a red rectangle below it	Tűzvédelmi eszköz	White
Red	Red circle with a diagonal slash	Tiltás	Black
Yellow	Yellow triangle with a black exclamation mark	Figyelemzeti	Black
Blue	Blue square	<u>Információs</u> jelek	White
Blue	Blue circle	<u>Rendelkező</u> jelek	White
Green	Green square with a green rectangle below it	Menekülési útirány, elsősegély, veszélyhelyzeti eszköz, felszerelés	White

Examples:



Wall hydrants



Use of hearing protection is mandatory!



Prohibitory



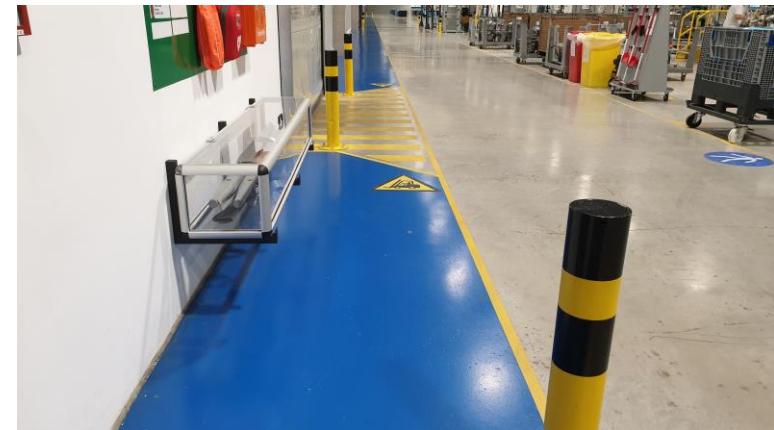
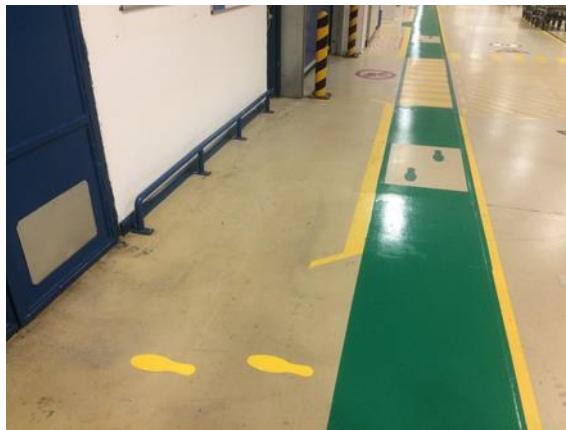
Highly flammable material or high temperature



Escape route to the right

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- Walking is only allowed on the designated pedestrian routes. Vehicle traffic routes can only be crossed at designated crossing points on foot. Do NOT walk on the material handling route.
- In production areas, on the "green roads" safety shoes are NOT mandatory. (CVS)
- In all cases, the pedestrian gates should be used for walking in and out of buildings.



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Regular work

- Any kind of injury - regardless of its severity - must be reported immediately to the direct supervisor or contact person
- Loose, hanging work clothes are not allowed
- In case of physical work, wearing rings, watches, bracelets on hands (also under gloves) is PROHIBITED
- It is FORBIDDEN to clean/cool yourself or each other with a compressed air blow gun!



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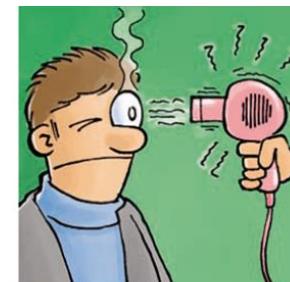
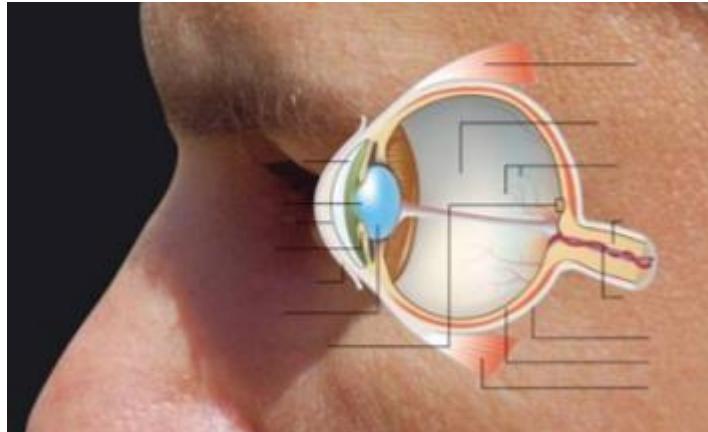
Personal Protective Equipment (PPE)

- Obligatory protective equipment in production areas, warehouses:
 - Safety footwear
 - Work safety helmet (Management of lifting machines, work at height)
 - Five-point body harness (Working at height)
 - Visibility vest

Other protective equipment may become necessary due to the risks of the work:
Welding, cutting, boarding work, use of chemicals, etc.

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Personal Protective Equipment – Eye protection



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Personal Protective Equipment – Eye protection

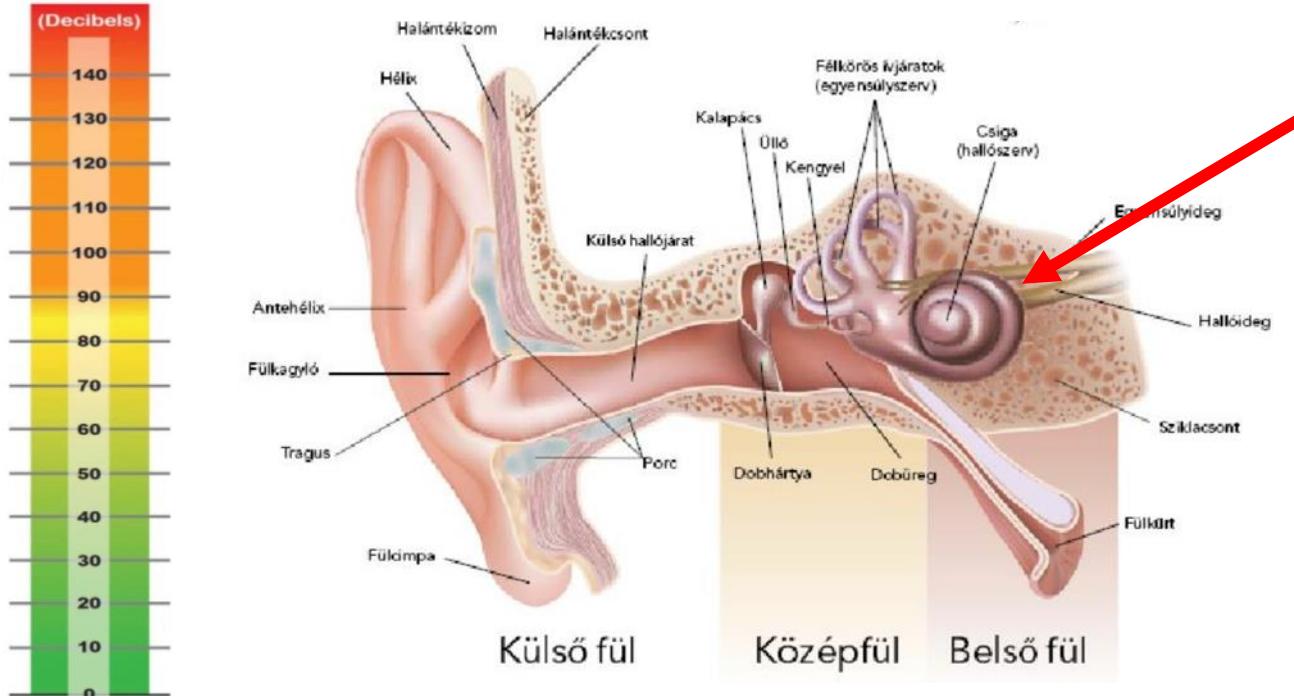


Can be worn with dioptric glasses

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Personal Protective Equipment – Hearing protection

Sound and noise



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Personal Protective Equipment – Hearing protection

- Protective equipment:
 - Earplugs
 - Earmuffs



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- Special attention must be paid to cleaning the work area!
- Oil stains must be wiped up immediately, in the event of a larger spill, the direct leader must be notified!



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Body and musculoskeletal injuries, diseases

Musculoskeletal disorders typically affect the back, neck, shoulders and upper limbs, but may also affect the lower body. The most common symptoms are back pain and back injury.

There may be reasons:

Manual handling of loads, especially when bending and twisting the trunk

Repetitive, high-effort movements

Uncomfortable or static postures

Vibration, poor lighting or cold working environment

Quick work

Long-standing seat or posture in the same posture



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Material Handling, Manual Material Handling

Dangers:

Crash, drop, risk of hand and foot injury

Collision with stationary / moving object

Long Term Occupational Disease

Harms:

Too burdensome or strenuous

Can only be done by rotating the trunk

The raised load suddenly moves

Inappropriate, unstable posture

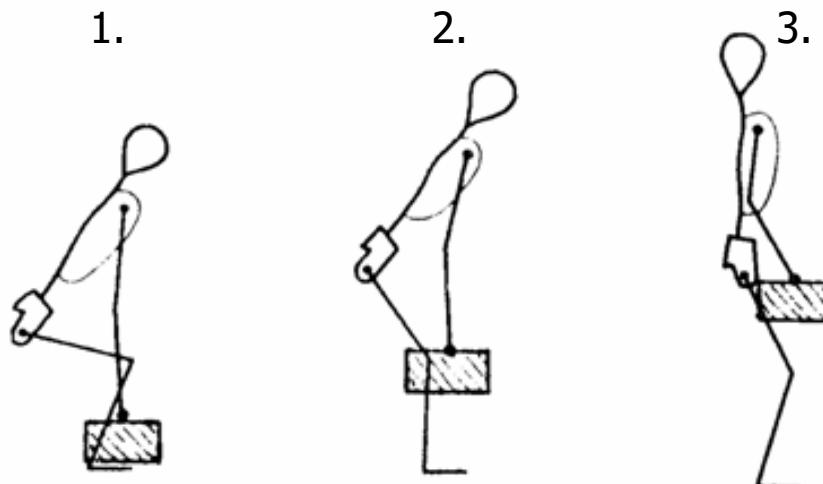


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Material Handling, Manual Material Handling

Correct load lifting:

1. Stand at the load with slightly stretched legs; be in a balanced squat position; hold your back straight, stretch your back and abdomen;
2. Raise the load by straightening the legs;
3. Straighten up the upper body!



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Basic first aid

Tasks for First Aid:

Feeling sick, dizziness, swinging on the floor as soon as possible.

In case of a falling accident, moving the injured person is prohibited!

In case of an electric shock, 24-hour hospital supervision is required!

In case of splashes of chemical, rinse immediately.

In case of ingestion of chemical, do NOT vomit!

In case of chemical splashes on the skin, wash immediately!

Burned skin area - after extinguishing - should be cooled down again!

Injection of a burning person with fire extinguishing powder and CO2 extinguisher only in the absence of other extinguishing options!



Work safety – Working at height

Legislative definition of temporary working at height:

„Non-permanent, short-term work performed at a level difference of more than 1 meter, where working conditions meeting safety and ergonomic requirements are not ensured, therefore individual risk prevention measures must be taken.”

Working at height with permission:

At a level difference of more than 2 meters in the following cases:

- Within 2 m from the edges of flat roofs
- Working on personnel lifts and mountings
- Working on top of machinery and equipment, where isn't any collective protection established

Legal background:

- 10/2016. (IV. 5.) NGM Decree
- EHS Management System
- 4/2002. (II. 20.) SzCsM-EüM joint decree

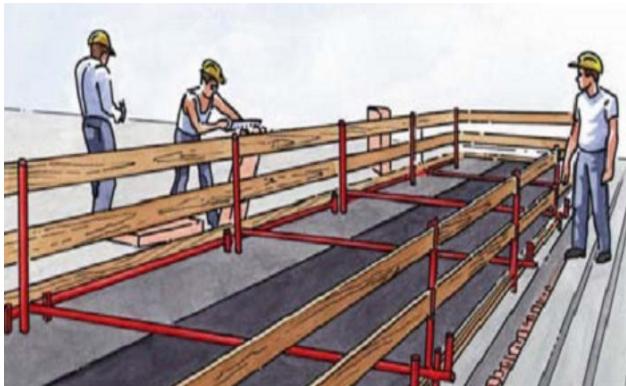
Work safety – Working at height

Minimum standards for working at height:

IT IS FORBIDDEN TO WORK ALONE WHEN WORKING AT HEIGHT PERFORMED!

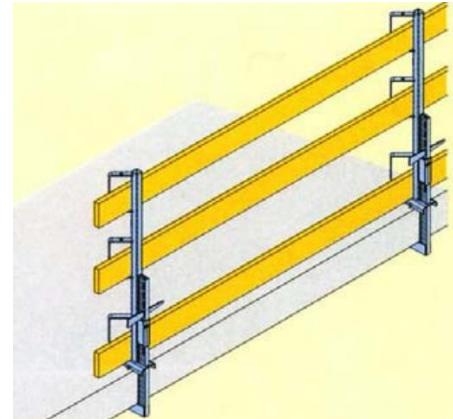
- At altitudes above 2 meters, work only in areas with adequate collective protection or other fall protection.
- Collective fall protection can be provided by a 1 m high, three-row, no more than 0.3 m pitch, with a footboard, a center board and a railing or equivalent solution. (see figures 4. sheet)
- In the absence of collective protection, the use of personal protective equipment is mandatory. Safety belts, ropes and carabiners must comply with the nature of the work and the relevant standards. The mooring points of safety ropes on equipment should, as far as possible, be above the worker's head, but in no case below waist height.
- Working outdoors at a height can only take place if the weather conditions do not endanger the health and safety of the worker.
- In a workplace where there is a risk of infalling or falling, or where the worker and those within the scope of the work are endangered by falling objects, protection must be provided by fencing, covering or other suitable means. (see pictures 4. sheet)
- **Working at height can only be carried out with a work permission!**
- In the vast majority of cases, this activity involves Facility and Maintenance staff, but may also affect other areas. (for example external supplier).

Work safety – Working at height



Fencing an area at risk of infalling

1 m high, three-row, no more than 0.3 m pitch, with a footboard, a center board and a railing.



Fencing an area at risk of infalling



Work safety – Working at height

Completion of a work permission:

The permission is filled in by the person ordering the work.
The completion of the work must be confirmed by a signature
at the end of the work and handed over to the person who
ordered the work.

Completed permits must be stored and collected in places designated by
maintenance.



Engedély magasan végzett tevékenységhoz

A leeséssel, lezuhással, beeséssel járó munka engedélyezése minden állandó és ideiglenes tevékenység végzéséhez szükséges.
Magába foglalja az állványokon, tetőn, személyemelőkben, emelőkosában, daruval és egyéb leesés veszélyes helyeken végzett tevékenységeket.

ZF Hungária Kft.
 Külső vállalkozó

Külső vállalkozó neve:

SORSZÁM

Tevékenység megnevezése, pontos leírása:

Helyszín/Épület/Gép:

Kezdés időpontja: Befejezés időpontja:

A munkát végző személy(ek):

Engedélyező neve, aláírása: Idő:

Munkairányító neve, aláírása: Idő:

Munkaterület vezetője, aláírása: Idő:

EHS csoport felelőse, aláírása: Idő:

HOZZÁJÁRULOK

A munkaterületet munkavédelmi szempontból biztonságosnak találtam és a munka elvégzéséhez az engedélyt megadom.

A munkavégzés teljes ideje alatt, minimum 2 fő jelenlété szükséges!

A munkavégzés helyszíne megközelíthető:

- fix, kiépített lépcsőről, létráról
- személyemelővel
- mobil állványról
- telepített állványról
- egyéb

Munkaterület / Munkakörnyezet:

- van kollektív védelem (3 soros védőkorlát)
- a munkakörnyezet alkalmas a munkavégzésre
- a munkaterület padlózata stabil, teherbírása megfelelő
- a megközelítés biztonságos (pl.: személyemelővel)
- amennyiben szükséges, a kikötési pontok biztonságosak
- egyéb

Munkavégzésre vonatkozó előírások:

- terület elkerítése (ott tartózkodók védelme)
- figyelmeztető tábla kihelyezése
- a munkahoz használt munkaeszközök biztonságosak, karbantartottak
- a munkaterület megvilágítása kielégítő
- a munkaterület szellőztetése biztosított (zárt tér esetében)

Egyéni védeőszökök:

- nem szükséges leesés elleni védfelcszerelés
- testheveder
- zuhanásigáció
- biztosítókötél
- védőszak (alpinista sisak)
- egyéb

További szükséges intézkedések:

- a munkavégzés komplexitásától függően, mentési terv készítése szükséges
- a munkavégzés beszállásai történik
- egyéb

Oktatás, személyek kompetenciája:

- a dolgozók a vonatkozó oktatásban részesültek



Work safety – Working at height

Working at height with permission	Areas
Automatic high bay ladders Within 2 m from the edges of flat roofs	Import warehouse
Working on personnel lifts and mountings	Both sites
Working on top of machinery and equipment, where is no collective protection	In both areas

Work safety – Boarding work

Boarding work:

Boarding work is any activity carried out by bending over or staying inside the equipment if this space is not designed for human staying.

Legal background:

- 1993. XCIII. Occupational Safety law
- MSZ-09-57.0033-1990 standard
- EHS Management System

Work safety – Boarding work

Enclosed spaces and spaces with unsuitable air for inhalation:

Those equipment – appliances, tanks, bunkers, shafts, sewers, boilers, transport tanks, silos, open baths, swimming pools and, in general, narrow spaces –, in which hazardous and noxious factors of production may be generated during the storage, processing or technological process of the materials, or may be released or accumulated during the boarding activity, is dangerous.

General requirements:

Each boarding in an enclosed space requires a work permission, which covers the identification of pre-boarding hazards and defines clear boarding conditions:

- A person who has reached the age of 18, medically fit and educated
- Minimum presence of 3 people to work (1 supervisor, 1 work leader)
- Airspace analysis, determination of the possible harmful effects of air on health. **The use of a calibrated airspace analyzer is mandatory.**
- Entrances to enclosed spaces must be marked with warning signs
- Exclusion of hazardous energies (gas, electricity)
- Boarding work can only be performed with a Boarding Work Permission!
- In the vast majority of cases, this activity involves Facility and Maintenance staff but may also affect other areas.

Work safety – Boarding work

Boarding work permission:

The permission is filled in by the person ordering the work. The completion of the work must be confirmed by a signature at the end of the work and handed over to the person who ordered the work.

Completed permits must be stored and collected in places designated by maintenance.



A beszállással járó, zárt téren végzett munka engedélyezése minden állandó és ideiglenes tevékenység végzéséhez szükséges. Magába foglalja a nyomástartó edényekben, tartályokban, általában a szűk, zárt terekben, gépek belső terében, aknákban végzett tevékenységeket.

ZF Hungária Kft.
 Külső vállalkozó

Külső vállalkozó neve:

SORSZÁM

Tevékenység megnevezése, pontos leírása:

Helyszín/Épület/Gép:

Kezdés időpontja: Befejezés időpontja:

A munkát végző személy(ek):

Engedélyező neve, aláírása: Idő:

Munkairányító neve, aláírása: Idő:

Felügyelő személy neve, aláírása: Idő:

Munkaterület vezetője, aláírása: Idő:

EHS csoport felelőse, aláírása: Idő:

HOZZÁJÁRULOK

A munkaterület munkavédelmi szempontból biztonságosnak találtam és a munka elvégzéséhez az engedélyt megadom.

A munkavégzés teljes ideje alatt, minimum 3 fő jelenlété szükséges (1 fő felügyelő / 1 fő irányító).

Levegővizsgálat / Légtételemezés:

nem szükséges
 munkakezdés előtt szükséges
 folyamatos felügyelet szükséges
 további ellenőrző mérések a munka időtartama alatt (Ezek száma:)

Munkahelyi légszennyezettségi határérték a következő anyagokra: O₂ CO CO₂ egyéb gázok:

oldószerkből keletkező gázok, gázok:
 egyéb anyagok (határértékkel):

Veszélyes energiák leválasztása:

nem szükséges intézkedés
 tolmácsok, csapok kizárasa
 csővezetékek megbontása
 feszültsegmentesítés
 hidraulikus, pneumatikus rendszerek kizárasa
 egyéb veszélyes energiák megszüntetése

Munkavégzésre vonatkozó előírások:

zárt térrészítés, veszélyes anyagok semlegesítése
 terület elkerítése
 figyelmeztető tábla kihelyezése
 a munkához használt munkaeszközök biztonságosak, karbantartottak
 a munkaterület megvilágítása kielégítő
 a munkaterület szellőztetése biztosított

Egyéni védecsközök:

légszívődő
 izolációs légszívődő
 antisztatikus védőruházat
 testheveder, biztosítókötél
 egyéb.....

További szükséges intézkedések:

tüzveszélyes tevékenységet kell-e végezni
 szikrumentes szerszámok szükségesek (robbanásveszélyes környezet)
 be és leesés elleni védelem biztosított
 egyéb.....

Oktatás, személyek kompetenciája:

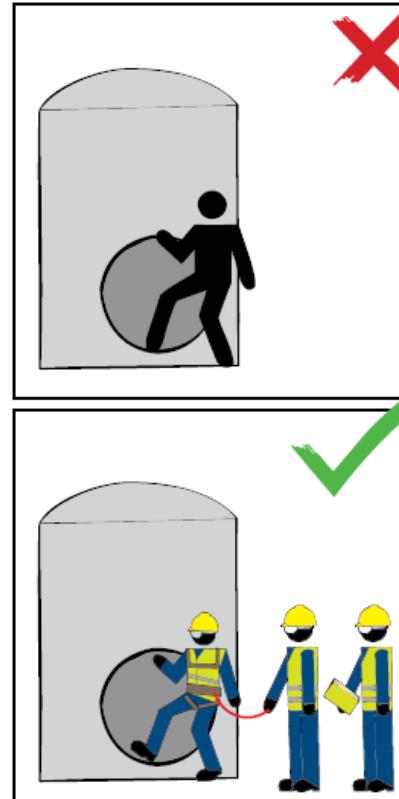
a dolgozók a vonatkozó oktatásban részesültek



Work safety – Boarding work

Requirements for boarding work

- Necessary and mandatory protective equipment
- If necessary full body strap, lifeline
- If necessary, a rescue plan



Work safety – Boarding work

Boarding work may occur in the following cases:

- Boilers
- Shafts (utility, water, sewage)
- Wet cooling towers
- Air technology
- Sprinkler fire water tank
- Heat treatment machines
- Shot blasting machines
- Punching machines
- Shafts under machines

} maintenance



Work safety – Boarding work

Name of enclosed space	Place of enclosed space	Division	Hazard
IPV-1 Shaft	Outer Area, Heat Treatment West Side	CVS	1.5 - 2 meter deep shaft. Risk of falling
IPV-2 Shaft	Outer Area, Waste yard	CVS	1.5 - 2 meter deep shaft. Risk of falling
IPV-3 Shaft	Outer Area, Nearby Proto	CVS	Approx. 4 meter deep shaft. Risk of falling
Water transfer shaft	Outer Area, towards logistics at the corner of the bridge	CVS	1.5 - 2 meter deep shaft. Risk of falling
Sewer 1	Outer Area, towards the logistics the south side of the bridge	CVS	2 meter deep shaft. Risk of falling Harmful vapors, gases
Sewer 2	Outer Area, towards the logistics the south side of the bridge	CVS	2 meter deep shaft. Risk of falling Harmful vapors, gases.
Cavity Machine - ME004701	B-Hall	CVS	Narrow, difficult to move, head injury, risk of falling. About 2 meters deep. Possibility of unintentional, accidental start.
Cavity Machine - ME004399	B-Hall	CVS	Narrow, difficult to move, head injury, risk of falling. About 2 meters deep. Possibility of unintentional, accidental start.
MTM Parts washer- ME098526	B-Hall	CVS	Narrow, difficult to move, head injury, risk of falling, risk of slipping. Possibility of unintentional, accidental start.
MTM Parts washer- ME076085	B-Hall	CVS	Narrow, difficult to move, head injury, risk of falling, risk of slipping. Possibility of unintentional, accidental start.
Heat treatment machine	Heat Treatment	CVS	Narrow, difficult to move, head injury, risk of falling, risk of slipping. Possibility of unintentional, accidental start. High heat load. Harmful vapors, gases.
Shot Blasting Machines, Central Extractor, Dust Extractor	Heat Treatment	CVS	Narrow, difficult to move, head injury, risk of falling, risk of slipping. Possibility of unintentional, accidental start. High heat load. Harmful vapors, gases.
Washers	Heat Treatment	CVS	Narrow, difficult to move, head injury, risk of falling, risk of slipping. Possibility of unintentional, accidental start. High heat load. Harmful vapors, gases.
Shafts under machines	Heat Treatment	CVS	Narrow, difficult to move, head injury, risk of falling, risk of slipping. Possibility of unintentional, accidental start. High heat load. Harmful vapors, gases.
Water storage tank 1	waterworks hill	CVS	Shaft 4-6 meters deep. Danger of falling. Risk of drowning.
Water storage tank 2	waterworks hill	CVS	Shaft 4-6 meters deep. Danger of falling. Risk of drowning.
Shaft 1	waterworks hill	CVS	1.5 - 2 meter deep shaft. Danger of falling.
Shaft 2	waterworks hill	CVS	1.5 - 2 meter deep shaft. Danger of falling.
Boilers (combustion chamber)		CVS	Narrow, difficult to move, head injury, risk of falling, risk of slipping. Possibility of unintentional, accidental start. High heat load, Harmful vapors, gases.
Roof (wet cooling towers, extractors)		CVS	Narrow, difficult to move, head injury, risk of falling, risk of slipping. Possibility of unintentional, accidental start. High heat load, Harmful vapors, gases.
Kitchen grease trap shaft	Parking lot	E	Shaft about 2 meters deep. Danger of falling. Harmful vapors, gases.
Oil trap shaft	Parking lot	E	Shaft about 2 meters deep. Danger of falling. Harmful vapors, gases.
Central water meter shaft		E	2 meter deep shaft. Risk of falling.
Sprinkler fire water tank		E	700 m ³ metal tank. Risk of falling, suffocation.
Elevator shaft (Schindler)	Material testing laboratory	E	Narrow, difficult to move, head injury, risk of falling, risk of slipping. Possibility of unintentional, accidental start. Compression.
Boilers (combustion chamber)		E	Narrow, difficult to move, head injury, risk of falling, risk of slipping. Possibility of unintentional, accidental start. High heat load, Harmful vapors, gases.
Roof (wet cooling towers, extractors)		E	Narrow, difficult to move, head injury, risk of falling, risk of slipping. Possibility of unintentional, accidental start. High heat load, Harmful vapors, gases.

Occupational Health and Safety Education

- The process of disconnecting machines and equipment from energy sources
- Its purpose: to be able to work on the given machine or equipment without the risk of injury caused by the energy source

Occupational Health and Safety Education

Who can carry out LOTO:

- mechanical disconnector: performs mechanical and on-site electrical disconnections on equipment
- electric disconnector: performs electric disconnection, checks the electrical disconnection carried out on the field side
- work supervisor: signs the LOTO form, makes sure that the section is correct

Occupational Health and Safety Education

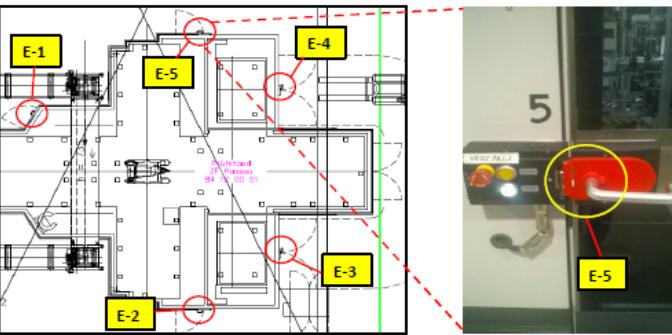
Administration:

Filling out the LOTO form:

This form is required by all must be used when sectioning off

LOTO instructions:

- they are available for all machines and equipment suspended; are provided with a photograph;
- they determine the order of sectioning

ZF		KIZÁRÁSI (LOTO) UTASÍTÁS		EGR_MIT			
Dátum:	Jóváhagyta:	Kidolgozta:	Azonosító				
P-Divízió		Tesztüzem	Vállozott: 00				
TEVÉKENYSÉG:		Lap: 1/1					
		I-es TESZTELŐGÉP (Bench - Tesztpad)					
		Napi karbantartás, Takarítás					
LOTO ALKALMAZÁSI REND							
1. Az érintett személyek értesítése 2. Előirásszerűen kapcsolja le a berendezést 3. Válasszon le minden szükséges energiaforrást 4. Alkalmazza a lezáró eszközöket, lakatokat, zárákat 5. Ellenőrizze, hogy minden energiaforrást leválasztott-e!							
Felelős Személy	Feljegyzések / Megjegyzések			Kizárási Pontok (db)			
	1. A javítashoz szükséges szervizajtó kizárasa. 2. Egy db ajtó nyitása is megszakítja, megállítja az összes mozgást.			5			
							
Energia Típusa	Kizárandó Eszköz /Berendezés		Kizárási Mód	Kizáras Helye	Kizáró Eszköz	Azonosító	
	Elektromos	E	1-es számú szervizajtó	A zárszerkezet nyitása, lakattal lezárasa	Nyugati oldal	Lakat	E1
	Elektromos	E	2-es számú szervizajtó	A zárszerkezet nyitása, lakattal lezárasa	Keleti oldal	Lakat	E2
	Elektromos	E	3-as számú szervizajtó	A zárszerkezet nyitása, lakattal lezárasa	Északi oldal	Lakat	E3
	Elektromos	E	4-es számú szervizajtó	A zárszerkezet nyitása, lakattal lezárasa	Északi oldal	Lakat	E4
	Elektromos	E	5-ös számú szervizajtó	A zárszerkezet nyitása, lakattal lezárasa	Nyugati oldal	Lakat	E5
LOTO ELTÁVOLÍTÁSI REND							
1. A munkaterület ellenőrzése, ne legyenek dolgozók, más személyek, munkaeszközök stb. 2. Munkaterület rendbeírása 3. A berendezés vezérlésének kikapcsolt állapotának ellenőrzése 4. A kizáró eszközök eltávolítása és a berendezés újraindítása 5. Az érintett személyek értesítése							

Occupational Health and Safety Education

What sectioning tools can be used:

LOTO - box: must be used in all cases when there are several exclusion points on one machine

Personal lock

Group lock

Lock multiplier (combination lock)

Danger sign

Other exclusion devices (e.g. in the case of pipe assemblies)

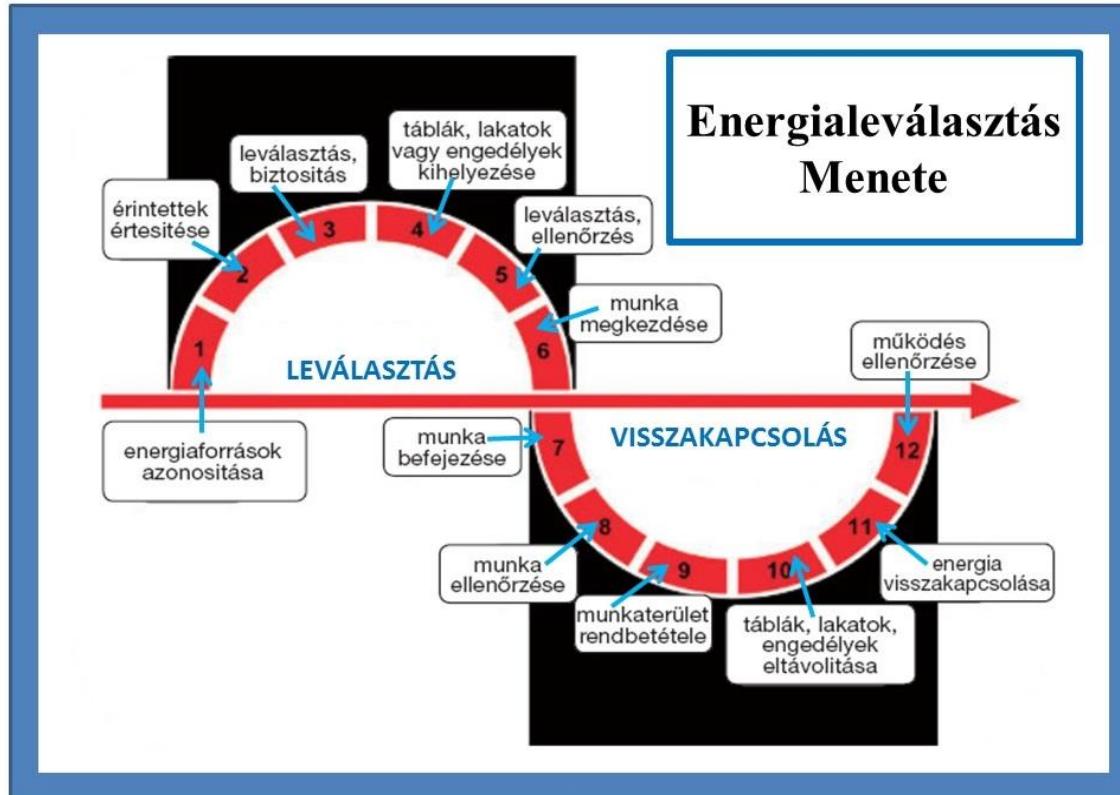


Contractor
Personal lock



ZF Hungária Kft.
Personal lock





Occupational Health and Safety Education

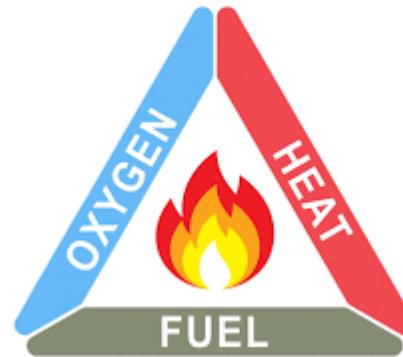
FIRE PROTECTION



Occupational Health and Safety Education

Condition of combustion

- Combustible material (fuel),
- Oxygen,
- Proper temperature,
- (Ignition).



- Fire is created and maintained when the conditions of combustion are given simultaneously in space and time.
- **Excluding one of these conditions, the fire can be extinguished.**

Occupational Health and Safety Education

Blocking fire protection equipment and electrical switchboards is forbidden! (**Temporarily not**)!



Occupational Health and Safety Education

Fire extinguishing methods available in the company:

- Fire extinguisher (dust, CO₂),
- Wall hydrant (within building),
- Above-ground hydrant (outside of the building).

Usage of a fire extinguisher:



Occupational Health and Safety Education

What to tell the Fire Department:

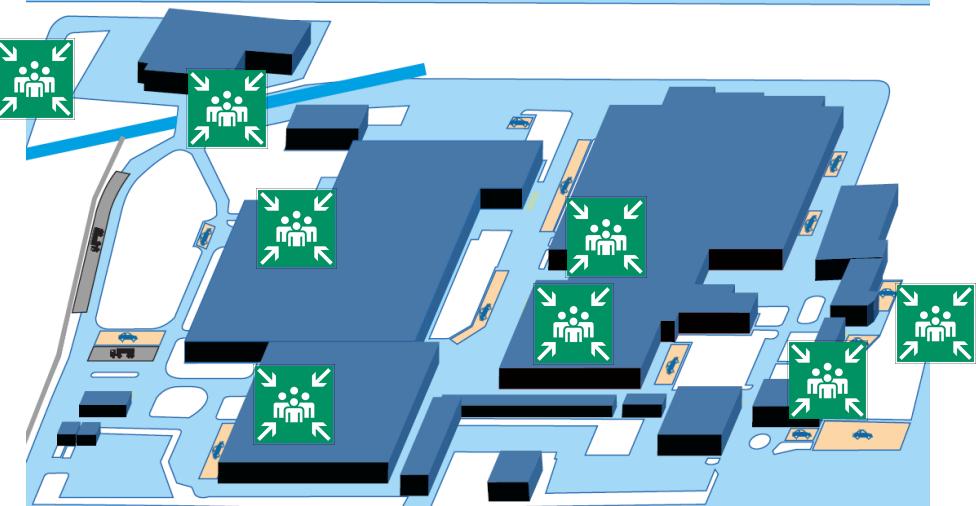
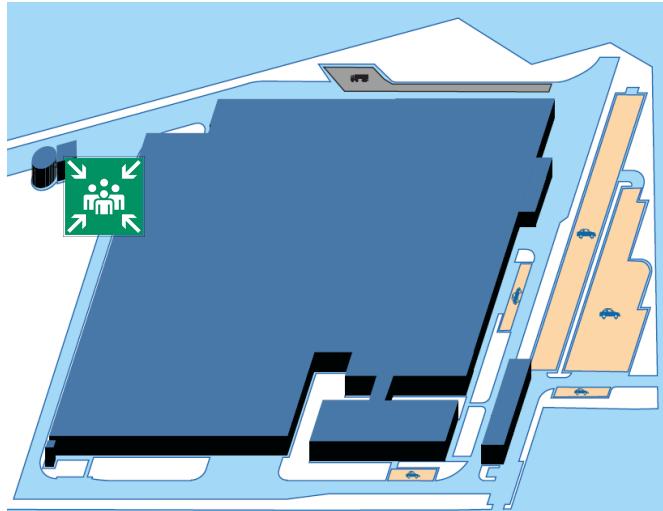
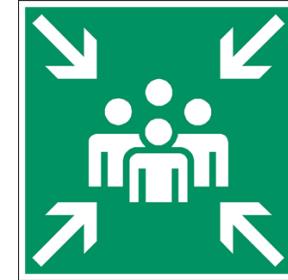
- Where is the fire (ZF Hungária Kft. 3300 Eger, Külsősor út 14., 3300 Eger, Kistályai út 2.)
- What is burning (what is in threat),
- Are there any injured, is there any life in danger,
- What is the caller's name, phone number (+ext.)

Fire Department: 105

**General emergency number:
112**

Occupational Health and Safety Education

meeting points

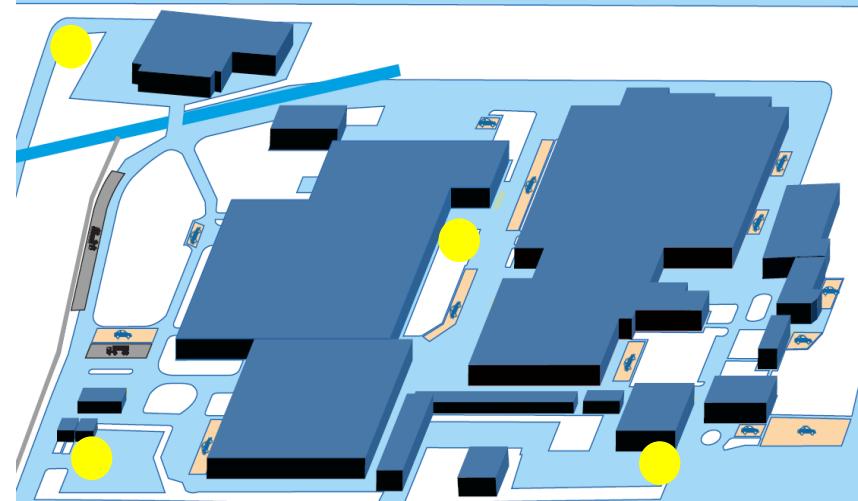
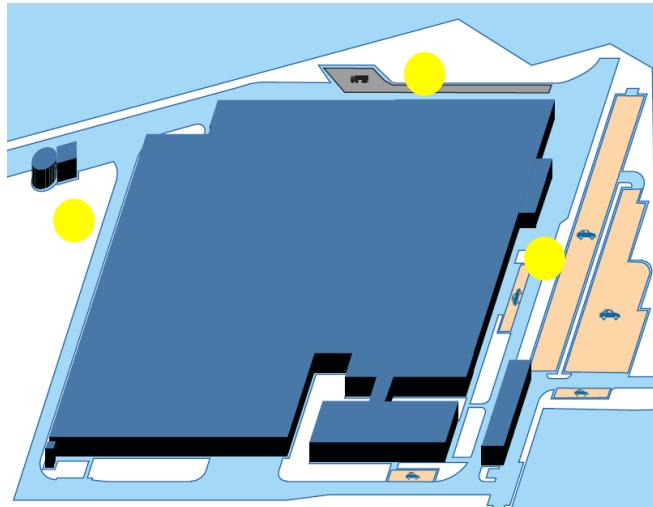


Occupational Health and Safety Education

Flammable activity may be carried out in possession of a fire permit (open flame).

Smoking:

- ZFH is a non-smoking workplace with exceptions.
- Smoking is only allowed in designated areas!
- Smoking areas:



Occupational Health and Safety Education

Fire protection deficiency:

Regular cleaning!



Occupational Health and Safety Education

Fire protection deficiency:



Do not block the fire protection equipment!

Thank you for your attention!