CE-Mærkning i praksis

Hvordan udarbejder man en risikovurdering? Det tekniske dossier? Hvor finder man relevante standarder? Og hvordan anvendes disse?

Mål

Du lærer helt grundlæggende at gennemføre en CE-Mærkning i praksis. Herunder udarbejdelse af en risikovurdering efter 3-trins modellen fra "EN ISO 12100" - samt definering af maskinens begrænsninger. Du lærer at finde og anvende relevante standarder. Endvidere at samle det tekniske dossier.

Målgruppe

Kurset henvender sig til både maskinkonstruktører og produktionsvirksomheder, da maskinen på kurset håndteres fra begge vinkler – både som maskinbygger, hvor risikovurdering og CE-Mærkning gennemføres – og som produktionsselskab, hvor maskinen modtages og sammensættes med andre i en produktionslinje.

Det vil sige industrielle teknikere, automationsfolk, produktionsvirksomheder, leverandører af maskiner, robotløsninger og produktionslinjer, CE-Mærkningskonsulenter, m.m.

Fremgangsmåde

Kurset er den engelske udgave af det europæisk certificerede CE-Mærkningskursus fra IBF-Solutions i Østrig, som arbejder sammen med det Østrigske standardinstitut. Agenda'en, som beskrevet på de følgende sider, følges ret nøje. Man lærer at:

- gennemføre en risikovurdering efter 3-trins modellen beskrevet i standarden EN ISO 12100
- følge CE-Mærkningsprocessen fra maskindirektivet og komme i mål med en CE-Mærkning
- definere maskinens begrænsninger samt vigtigheden heraf
- fokusere på det væsentlige ved indkøb af maskiner og robotløsninger
- finde, udvælge og anvende relevante standarder, herunder A, B og C standarder
- anvende VSSK'erne som et check for at ens arbejde er komplet
- udarbejde en risikovurdering for snitflader, når man indkøber og sammensætter maskiner
- håndtere ansvaret ved underskriften af overensstemmelseserklæringen

Der veksles i høj grad mellem teori og praksis.

Forudsætninger

Grundlæggende kendskab til CE-Mærkning er et krav. Kendskab til anvendelse af standarder, en stor fordel.

Materiale

Originalt kursusmateriale fra IBF i Østrig (på engelsk) anvendes. Kurset afholdes på dansk. Man medbringer og anvender sin egen computer på kurset. Al materiale udleveres – også skabeloner, vejledninger og lign.

Inklusiv i prisen

Udover kurset og al materiale inkluderer prisen fuld dagsforplejning for kursusdagen i form af morgenbrød, frokost, kaffe/te/vand, eftermiddagskage, frugt, m.m.

Tilmelding

Send en kort mail til bowitek@bowitek.dk

CE-Mærkning i praksis

Day 1: Designing safe machinery - Risk assessment in practice

Introduction and Overview

- The important role of the designers in the CE processes.
- Introductory example: Why seemingly good solutions do not always meet the legal requirements.
- Legally required risk assessment: WHO has to do WHAT and WHEN?
- Cooperation between different departments: mechanical engineering, control engineering, technical documentation, etc.
- Safety arises (mostly) in a team: important interfaces to sub-suppliers and customers.
- What does "integration of safety" mean?
- Which standards support safe design? Do these have to be applied?
- Caution when delegating design work or risk assessments to third parties!
- Attention! The design must be based on the law, not (only) on customer requirements!

Systematic risk assessment according to EN ISO 12100

- Risk assessment according to EN ISO 12100 - How the legal requirements are met as efficiently as possible!
- What has to be considered in "reasonably foreseeable misuse" - and what not.
- Figure 1 from EN ISO 12100 as a perfect guide through risk assessment and risk reduction.
- Relationships between EN ISO 12100 and the control engineering standards EN ISO 13849-1 and EN ISO 13849-2.

Technical and design requirements

- Which technical requirements are required by law.
- Strategies for the "inherently safe design".
- Why non-separating protective devices (e.g. light curtains) are not always suitable for achieving the required risk reduction.
- Calculation example for electro-sensitive protective devices (ESPEs).
- What you should pay attention to when selecting protective devices (separating or non-separating).
- When protective devices have to be interlocked - when guard lockings are required.

With the help of several exercises and examples, you will learn the practical approach to pragmatically identifying relevant hazards in the design process, assessing the associated risks and selecting and documenting suitable (and economically justifiable) solutions for risk reduction.

You will find out why design engineers tend to exaggerate safety-related solutions and sometimes result in high costs for their company or customers. Less is often more - but only according to the legally permitted concept!

CE-Mærkning i praksis

Day 2: Efficient CE marking according to the machine directive

Response to basic questions:

- The two most important points for the efficient implementation of the requirements of the Machinery Directive.
- What are the risks in the event of non-compliance with the machinery directive?
- What causes high "CE costs" and how can these be reduced?
- Who signs the declaration of conformity? What are the requirements?
- Does it make sense to install someone "responsible" for the CE marking, e.g. a CE coordinator or CE manager?
- Why these people usually cannot take responsibility for all design details and why the designers remain responsible.
- In which cases the use of external service providers can be worthwhile, for which they can take responsibility and for what not.

Step by step to the CE marking - legally secure and systematic:

- Efficient project start: Why it is important to define the "limits of the machine" as early as possible.
- Classification of the product according to the Machinery Directive: machine, partly complete machine, interchangeable equipment, etc.
- When do several independent machines become "assemblies of machinery" "?
- Which directives must be observed in addition to the machinery directive?
- Harmonized standards: What does "presumption of conformity" mean?
- Short repetition: Risk assessments (details are explained on the first day of the seminar).
- Arrange technical file: Content, language requirements, significance in the event of complaints from authorities and courts.
- Why it is important to also observe the formal requirements (language, form, etc.) of the instructions manual and assembly instructions.

Cooperation between various specialist departments or sub-suppliers:

- Inspection obligations when purchasing machines and components
- What sales brochures have to do with product liability.
- Can buyers trust CE?
- Modification of machines: In which cases are you dealing with an “important change / substantial modification” and what does that imply?
- What interfaces exist between the departments or companies involved in a project (especially in industrial plant construction)?

Discussions, exercises and examples enliven the course of the seminar.