

LITERATURE

It is expedient, the time resource t_{end} to be subdivided into inspection intervals for maintaining security, for instance t_1 and t_2 , while being based on the presumption that if, after the expiry of the first interval, it has not been possible, for one reason or another, to establish the change in the length of the crack, then after the expiry of the second interval too still the critical length of the crack will not have been reached [14]. In this manner, an interval Δt_i is reserved in advance, within which all permitted inaccuracies and unforeseen circumstances may be covered, both regarding the registration and monitoring of the crack, as well as of the analytical assessments (calculations).

3. Conclusion

The FM postulates may on principle be applied in the following fields of welding:

- selection, optimization, and creation of main and additive materials;
- strength assessment (designing) of structures with the assumption of crack availability. The admissible stress in this case is determined by means of the *fracture toughness*;
- additional dimensioning of already designed and fabricated welded products with registered crack-shaped flaws. In this case, the *critical magnitude of the flaw* is determined;
- analysis of occurred failures of welded structures and the ensuing prevention measures for avoiding future failures.

Currently, in world practice, the "FAD" concept has won recognition, designated for elastic-plastic materials, for instance the structural weldable steels. It is being served by the so-called "Master-curve" by which the necessary FM-parameters of the material are determined. Besides these, also the conventional parameter of material toughness - "Charpy impact energy KV", determined by the *Charpy-V* test, confirmed in practice since many years, may be used.

For the successful application in engineering practice of the FM methodological apparatus that has been envisaged in the present applied European standards (Eurocode 3, EN 13445, EN 13480, etc.) it would be appropriate to broaden the specialized training on fracture mechanics (for instance within the Master's degree level) in the technical universities in our country, in first place for the civil and mechanical engineering specialties.

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