

Residual life assessment of boilers

For more efficient maintenance

■ Reduce inspections while retaining reliability

You require excellent reliability from your industrial boilers. Unexpected stoppages involve losses in production and expensive repairs. To play safe you can carry out regular inspections of the most sensitive components. On top of that, you can work with a broad safety margin when estimating the useful life of these components. But that's not particularly efficient! The best way forward is to have a precise knowledge of the residual life of the plant. When you know with precision the aging condition of your plant you can reduce the number of inspections without risk and use the components for longer.

■ Precise schedule of replacement

Indeed, by accurately positioning the critical components of your boiler on the residual life curve, you can reduce the chances of unexpected stoppages to a minimum. You can then invest in new components on a just-in-time basis, and plan them far in advance. You can draw up a long-term maintenance plan, complete with budget, optimal replacement time and reduced number of interim inspections.

■ Experienced specialists, accurate calculations

Such a precise calculation of the residual life of a boiler requires specialist know-how. The first problem is that of defining the critical components. Then there is the need to take measurements by means of non-destructive investigation techniques. To do this efficiently it is extremely important to know exactly what to measure and when to measure it. These measurement values are then fed into a calculation program. From the results we derive the residual life and draw up an optimum maintenance plan. At Laborelec we have experienced experts who can carry out each of these steps in a professional manner.



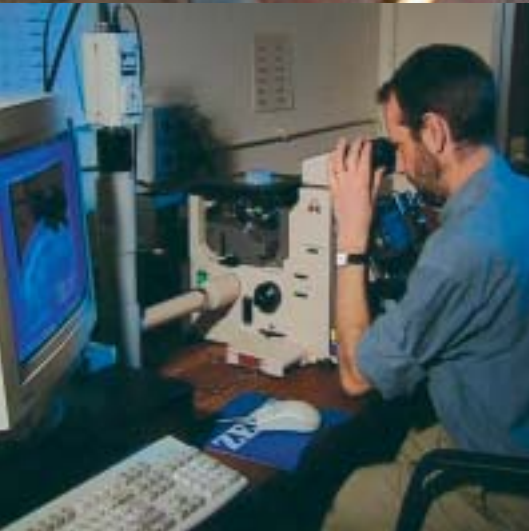
An expert partner

■ Experts in industrial boilers

We are specialised in assessing the residual life of high and low temperature steam boiler components. From fire tube boilers and start-up boilers to large industrial boilers of 600 MW. We have 30 years of experience in this area and have built up a worldwide reputation. We have already completed projects in the United States, Hungary and Italy.



The technical Competence Center
in energy processes and energy use.
From innovation to operational assistance.



We will gladly help you to maximise the reliability of your plants and installations and keep the costs of maintenance to a minimum.

■ Total 'à la carte' service

We offer a total service and perform each element with efficiency and professionalism. And we will be happy to advise on any particular aspect of the residual life assessment. We offer the following steps on the menu:

- 1. Identification of the critical components.** We do this by means of an audit, in which we examine the design details as well as the history and operation of the boiler. The important criteria are the operating temperature, material properties and dimensions of the components.
- 2. Non-destructive investigation** (see product file of the same name). With the help of non-destructive measurement methods we assess the degree to which the critical components have degraded. We may carry out these measurements ourselves or entrust them to subcontractors. In any case we organise, co-ordinate and monitor the measurement project whilst keeping any hindrance to your production processes to a minimum.
- 3. The calculation.** We use our own software program for this, based on the American ASME code and the German TRD code. We select the correct input data for the program from the non-destructive investigation.
- 4. Residual life assessment.** We interpret the program output and use this to give an accurate assessment of the residual life of the component.
- 5. Maintenance schedule.** We define the optimal intervals for future inspections. This schedule is designed to monitor the degradation of the equipment without a single superfluous inspection. In addition, we give recommendations on how the boiler should be operated.

Aside from the actual residual life assessment our experts can give recommendations on how alternative materials can be used to extend the residual life of the components, based on material tests and their knowledge of materials.



Five reasons for you to choose Laborelec:

- you have one-stop shopping for your energy needs;
- you get access to more than 40 years of experience;
- you get rapid service with reliable solutions;
- you increase the profitability of your installations;
- you benefit from independent and confidential advice.

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