

Heat Treatment: Best practice for the automotive industry: RQP 1 UPDATE

As reported in IFHTSE Bulletin 2012/4, RQP1 (Recommandations Qualité Processus) originated as a French proposal for an alternative to the American CQI-9 qualitative specifications for heat treatment of components for automotive manufacture. The proposal was developed by a special committee of CETIM (national technical centre of the French engineering industry) located in Senlis, North of Paris. The main objective of this effort is a modified version of CQI-9, better adapted to the French automotive industry and if possible to the European automotive industry. CQI-9 is based on American AMS 2750 D procedures and is seen to be not well adapted to the European manufacturing environment; it also involves additional costs not justified by the minimal qualitative improvement claimed. The work of the CETIM committee was reported at the 2012 Congress of IFHTSE French member A3TS *'Investissements d'avenir dans le traitement des matériaux'* 'Future investment in materials processing'

(Grenoble 6-8 June 2012 French language).

RQP 1, now seen to represent best practice in satisfying the everyday heat treatment quality demands of the automotive industry, has been validated by the companies involved in heat treatment (Bodycote, Hacer, Metatherm, Thermi-Lyon) and the OEMs and Tier one suppliers (Delphi, Faurecia, NTN SNR, PSA Peugeot Citroën, Renault, SKF, Valeo). RQP has been integrated into the QA procedures of Renault and PSA Peugeot Citroën which have also recommended that work should begin immediately on standardisation. RQP is believed to be easy to implement. Further, it is not only at least equivalent to CQI-9, it has the advantage of offering qualitative improvements.

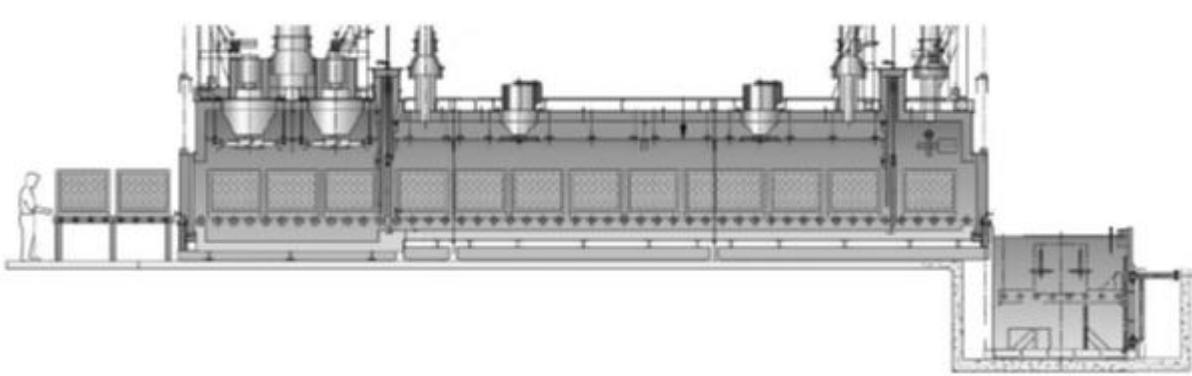
The way is still open for international standardisation without necessarily imposing one or the other system on suppliers.

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RQP DOCUMENT LAYOUT

- GENERAL ORGANISATION OF A HEAT TREATMENT WORKSHOP
- CONTRACT REVIEW

- TREATMENT



PREPARATION

CYCLE CONTROL

MEDIUM CONTROL

COOLING

- INSPECTION
- FINISHING

ATZK 24th National Conference on Heat Treatment with International Participation

27-29 November 2012

IFHTSE Czech member ATZK has put together a highly practical, industrially-oriented programme for the 2012 event in their series which uses Czech, Slovak, and English with interpretation

Location: Hotel Gustav Mahler
JIHLAVA, Czech Republic
Jihlava is about 130 km South East of Prague

Accommodation: Gustav Mahler Hotel or Grand Hotel Jihlava. The hotels are situated in the centre of the town. Accommodation will be booked by organizer at special rates

Registration fees (EUR): discounted rate in first column is available until 15 November

Authors	180	200
Other participants	200	220
Members of ATZK	160	180
PhD students (daily study)	80	100

Programme Preview

12. Grumbt Gundis - TU Bergakademie Freiberg (Germany)
Improvement of wear behaviour of high loaded components and tools by multi-combined surface treatment
1. Altena Herwig - Aichelin Holding GmbH (Germany)
Heat Treatment of Gear Parts – Possibilities of Time and Cost Savings
2. Bárta Josef - VÍTKOVICE HEAVY MACHINERY a.s. (Czech Republic)
Accelerated cooling of large diameter C-Mn steels in water, quenching or normalizing?
3. Baumann Jens - Process Elektronik GmbH (Germany)
New measurement and control techniques for predictable results in ferritic nitrocarburizing
4. Beitz Thorsten - TECHNOIL s.r.o. (Czech Republic)
Substitution of Quenching Oils by Waterbased Polymer Quenchants – quenching without Flames and Fumes
5. Benešová Soňa - ZČU Plzeň (Czech Republic)
Using numerical modeling to optimize heating gear with emphasis on the deformation
6. Brenner Berndt - Fraunhofer-Institut für Werkstoff- und Strahltechnik IWS (Germany)
New technical and materials advances of surface heat treatment by way of high-power diode lasers
7. Čapek Jaroslav - VŠCHT Praha (Czech Republic)
Influence of the temperature of the short-period heat treatment on mechanical properties of the NiTi alloy
8. Čížkovský Juda - ECOSOND s.r.o. (Czech Republic)
Experience in polymer immersion bath quenching
9. Dappa Andreas - SCHMETZ GmbH (Germany)
Latest purpose-directed hotzone and cooling-gasstream design of vacuum furnaces for different hardening applications
10. Egger Helmut - IVA Industrieöfen GmbH (Germany)
Energy efficient central endothermic gas supply system with flow management controls
11. Grgač Peter - STU Tmava (Slovak Republic)
Preparation and analyse of CrN layers on tool steel

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12. Grumbt Gundis - TU Bergakademie Freiberg (Germany)
Improvement of wear behaviour of high loaded components and tools by multi-combined surface treatment
13. Haase Peter - IVA Industrieöfen GmbH (Germany)
Energy efficient nitriding and nitrocarburising in modern retort furnaces
14. Hanes Tomáš - TU Zvolen (Slovak Republic)
Overview of coating technology and coatings for tools suitable for coinage
15. Heineck Stefan - STANGE Elektronik GmbH (Germany)
Kontrolliertes Gasnitrieren / Nitrocarburieren Prozesssteuerung und Möglichkeiten der Vorausberechnung
16. Jurčí Peter - STU Tmava (Slovak Republic)
Tribological Properties of CrAgN Thin Films
17. Kaštan Rudolf - Mincovňa Kremnica š.p. (Slovak Republic)
Substitution of Quenching Oils by Waterbased Polymer Quenchants – quenching without Flames and Fumes
18. Kopeček Jaromír - Fyzikální ústav AV ČR (Czech Republic)
The pseudoelasticity and the shape memory effect in CoNiAl alloys
19. Krum Stanislav - ECOSOND s.r.o. (Czech Republic)
Development trends of quenching oils
20. Krum Stanislav - ČVUT Praha (Czech Republic)
Changes of subsurface layer of austenitic steel after TiN coating
21. Kříž Antonín - ZČU Plzeň (Czech Republic)
Differences in quality of 18CrNiMo 7-6 steel and its influences at deformation after carburizing
22. Mori Gregor - Montanuniversitaet Leoben (Austria)
Effect of Isothermal and Thermo-mechanical Heat Treatment Phase Precipitation and Corrosion Properties of Alloy 926
23. Němeček Stanislav - MATEX PM (Czech Republic)
Microstructure and properties of cast iron after laser surface hardening
24. Novák Pavel - VŠCHT Praha (Czech Republic)
Thermal stability of Al-Cu-Fe quasicrystals prepared by SHS method
25. Pálka Stanislav - AFE CRONITE CZ s.r.o. (Czech Republic)
Production of heat treatment fixtures under conditions of the new technologies
26. Průša Václav - PLANSEE (Czech Republic)
Powder metallurgy production of heavy metals (Mo, W, Ta, Nb), use and application for vacuum furnaces Hot Zones
27. Przygoński Marcin - SECO / WARWICK S.A. (Poland)
Optimal heat treatment technology for case hardening of wind industry components
28. Przygoński Tomasz - SECO / WARWICK ThermAL S.A. (Poland)
New Plug-and-play Installation Technology by SECO/WARWICK for Surface Hardening of Stainless Steel in Lean Production Process (Expanite)
29. Rašková Stanislava (Czech Republic)
Thermal processing micro-alloyed carbon steels with controlled cooling
30. Rašková Stanislava (Czech Republic)
The management system requirements in production of thermal processing
31. Ritter Karl - ALD Vacuum Technologies GmbH (Germany)
Experience with vacuum carburizing with high pressure gas quenching in mass production
32. Rosenberg Gejza - ÚMV SAV (Slovak Republic)
Influence of conditions of intercritical annealing on ability to predict tensile properties of steels from measured values of hardness
33. Rosenberg Gejza - ÚMV SAV (Slovak Republic)
Mechanical properties of cover and undercover layers of steel sheets
34. Růžovič Martin - 3R Technics Slovakia s.r.o. (Slovak Republic)
Non-destructive measurement of surface hardness and case-hardening depth by Škoda Auto a.s.
35. Salabová Petra - PRIKNER - tepelné zpracování kovů s.r.o. (Czech Republic)
Sub-zero Treatment of P/M Vanadis 6 Ledeburitic Tool Steel
36. Skrbek Břetislav - TU v Liberci (Czech Republic)
Magnetic diagnostic of decarbonization files of steels

Continued on page 3 

37. Stanislav Jiří - Bodycote HT s.r.o. (Czech Republic)
Plasma nitriding process of high-alloy steel
38. Stolař Pavel - ECOSOND s.r.o. (Czech Republic)
Questions of gear wheel deformation after heat treatment
39. Šuchmann Pavel - COMTES FHT a.s. (Czech Republic)
Optimisation of induction hardening parameters through numerical simulation
40. Voděrová Milena - VŠCHT Praha (Czech Republic)
Protective layers of iron and nickel aluminides on carbon steel
41. Vráblík Filip - ECOSOND s.r.o. (Czech Republic)
Electron beam in heat treatment

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Sponsors:



Publication notice

'Steel and its heat treatment - a Handbook'



ISBN 978-91-86401-11-5

Just published by Swerea/IVF, this 832-page book contains material, contributed by a wide range of experts, covering metallography, steel grades, heat treatment processes, testing, safety and the environment. It is intended for wide use by all involved, whether heat treaters, designers, production managers, operators, teachers and students. In addition to being a general reference work, it can also be used in education and training.

'Steel and its heat treatment - a Handbook'
Swerea/IVF 12801; EUR 145 (exclusive of tax and shipping charges)

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The abstract submission system for the 8th Pacific Rim International Conference on Advanced Materials and Processing (PRICM-8), planned for August 4-9, 2013, is now open. PRICM-8 is jointly organized by five international materials societies and will be held in Waikoloa, Hawaii, a venue chosen to provide equally reasonable access to attendees from the various Pacific Rim countries. PRICM is jointly sponsored by The Chinese Society for Metals (CSM), The Japan Institute of Metals (JIM), The Korean Institute of Metals and Materials (KIM), Materials Australia (MA), and The Minerals, Metals & Materials Society (TMS) and rotates among these sponsoring organizations. TMS will host PRICM-8 in 2013.

Topics include:

- Materials for energy and environment
- Advanced high-temperature structural materials; Advanced steels and processing
- Light metals and alloys
- Biomaterials, smart materials, and structures
- Rare Earth, electronic, and magnetic materials
- Thin films and surface engineering
- Materials and processes for enhanced performance
- Solidification, deformation and related processing
- Modelling and simulation

CONFERENCE DIARY

2012 HK 2012

10-12 October Wiesbaden, Germany
(www.awt-online.org)

**BALTMATTRIB - 21st International Baltic Conference:
Engineering materials and tribology**

18-19 October - Tallinn, Estonia
(www.ttu.ee/baltmattrib2012)

20th Congress IFHTSE

23-25 October - Beijing, China
(www.20ifhtse.org)

**24th National Conference on Heat Treatment with International
Participation**

27-29 November – Jihlava, Czech Republic
(www.asociace.cz)

2013 European Conference on Heat Treatment and Surface Engineering

25-26 April - Luzern, Switzerland

Heat Treat and Surface Engineering Conference and Expo

16-18 May - Chennai, India

**2nd Mediterranean Conference on Heat Treatment and Surface
Engineering**

11-14 June - Dubrovnik-Cavtat, Croatia

ASM Heat Treating Society 27th Conference and Exposition

16-18 September - Indianapolis, Indiana, USA

HK 2013

October - Wiesbaden, Germany
(www.awt-online.org)

2014 21st Congress IFHTSE / combined with European Conference on Heat Treatment and Surface Engineering

12-15 May - Munich, Germany

2015 ASM Heat Treating Society 28th Conference and Exposition

2016 22nd Congress IFHTSE

?? USA ??



*Scott MacKenzie opens 6QCD/4IDE
in Chicago 10 September*



*Lynn Ferguson,
Deformation Control
Technology Inc at
6QCD/4IDE Chicago*

