

## Information:

**Venue:** IWS TU Graz  
Kopernikusg. 24  
A-8010 Graz

**Deadlines:** Abstracts: 1.5.2005  
Acceptance: 15.5.2005  
Full Manuscript: 1.6.2005

**Registration until 15.6.2005:**

online: <http://iws.tugraz.at>

**Conference language:** english

**Conference fee:** € 350,-

The conference fee includes lunch, reception as well as the proceedings. You can pay in advance free of charge by bank transfer:

BLZ (Reg.No): 12000  
Account No: 51656 101 827  
IBAN: AT73 1200 0516 5610 1827  
BIC: BKAUATWW

or at the conference office (cash or MasterCard).

Students attendance is free (without proceeding).  
Proceedings: €50,-

## Arrival:

*By car:*

There are several parking garages in the vicinity of the conference location (see: <http://www.gpg.co.at/garagenliste.htm>)

*By train:*

From the main station take tramway 3 to Mandellstraße (appx. 2 min walk).

*By plane:*

Airport Graz-Thalerhof is located appx. 15 km southern of Graz. Transfer by taxi last appx. 25 minutes and costs about € 25,-.

## For room reservation contact:

Graz Tourismus Ges.m.b.H.  
A-8010 Graz, Herrengasse 16  
Tel.: +43 (316) 80 75-0  
Fax: +43 (316) 80 75-15

Or:

[Http://www.graztourismus.at](http://www.graztourismus.at)



## Organisation:

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Visit our homepage

[Http://iws.tugraz.at](http://iws.tugraz.at)

[Http://www.cleuson-dixence.ch](http://www.cleuson-dixence.ch)

Final Program

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MATERIALS

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WELDING

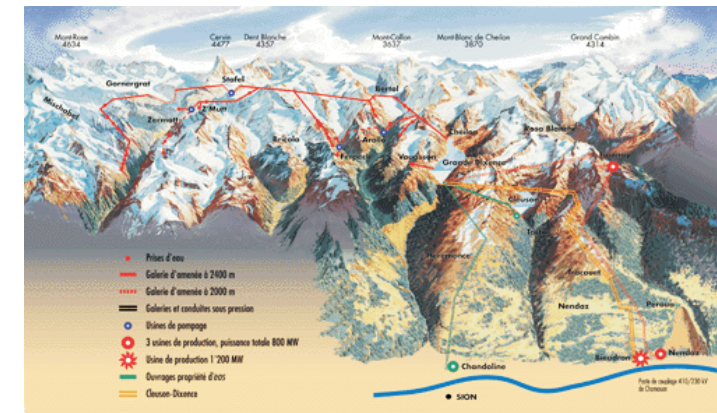
IWS

FORMING



High Strength  
Steels for  
Hydropower Plants

5th and 6th of July 2005  
Graz, Austria



## Scope

The scope of this conference is to exchange existing available knowledge about the use of high strength steels (Y.S. > 690MPa) for pressurised components in hydropower plants in the viewpoint of a safe fabrication and service of these important components.

This conference which is organised by IWS TU Graz in cooperation with EOS Cleuson-Dixence Construction shall on one hand supply background information about the project Cleuson-Dixence and the accident happened in december 2000 and on the other hand about the status and results of investigations regarding the metallurgical aspects of the failure and the consequences for the rehabilitation.

Moreover available experience on the fabrication and service properties of high strength steels for hydropower application (>=S690) will be reported from the viewpoint of steel suppliers, fabricators, institutes and utilities.

Graz, Mai 2005

Bernard Hagin                      Horst Cerjak  
EOS CD                              IWS TUGraz  
Conference Chairmen

## Social Program for accompanying persons: € 150,-

Graz, the Cultural Capital of Europe 2003 offers many opportunities. A social program including two meals, the reception a guided tour and an excursion will be planned for the accompanying persons.

## Tentative Program

### Tuesday, July 5th

- 12:00 Welcome, Informal lunch  
13:30 **Project Cleuson-Dixence and the Accident on Dec. 12th 2000**  
B. Hagin (EOS, Switzerland)  
14:00 **Steel S890 for pressurised shaft CD: Review of the Metallurgical Investigations**  
H. Cerjak, G. Dimmler, N. Enzinger (TU Graz, Austria)  
14:30 **Results of Fracture Mechanics Investigations on Steel S890 and its weldments**  
H. Cerjak, G. Dimmler (TU Graz, Austria), E. Roos (MPA Stuttgart, Germany)  
  
15:00 **Pause**  
15:30 **Results of Stress Corrosion Investigation on Steel and Weldments on Steels S890 and S690**  
Th. Böllinghaus (BAM, Germany), H. Cerjak, N. Enzinger (TU Graz, Austria), Th. Dorsch (FANP, Germany), K. Saarinen (VTT, Finland)  
16:00 **Rehabilitation Concept for the Project Cleuson-Dixence**  
B. Hagin (EOS, Switzerland), P. Marietta (EdF ISF, France)  
  
16:30 **Pause**  
17:00 **Design and Construction Principles of High Pressure Power Conduits in Austria**  
G. Heigerth (TU Graz, Institut für Wasserbau und Wasserwirtschaft, Austria)  
17:20 **Experiences made at the new pressurised shaft of AHP Kaprun Hydro Power Plant**  
P. Stering, Wagner (AHP, Austria)  
17:40 **Construction of steel penstocks using HT100 at Kan-nagawa Hydro Power Plant of Tokyo Electric Power Company**  
K. Kubota, M. Minami (TEPCO, Japan), N. Watanabe (Mitsubishi Heavy Industries, Ltd., Japan)  
18:00 **End**  
19:30 **Reception**

### Wednesday, July 6th

- 9:00 **A Study on Applicability of S690QL1 and S890QL1 High Strength Steels to Penstocks in Japan**  
J. Liao, H. Okada (Kurimoto Ltd, Japan)  
9:20 **Technical Guideline to adopt 950MPa Class High Tensile Strength Steel Plate (HT100) for Penstocks**  
T. Higashikubo (Mitsubishi Heavy Industries, Ltd., J)

- 9:40 **Metallurgical basis of 890 MPa class high yield strength steel plates for penstock**  
K. Onishi (Sumitomo, Japan)  
10:00 **Development of 950 MPa class High Strength Steel for Penstock**  
K. Kurebayashi (Nippon Steel, Japan)  
10:20 **State of the art in the production and application of high-strength heavy plates for hydropower applications**  
F. Hanus, G. Luxenburger, F. Schröter, W. Schütz (Dillinger Hüttenwerke, Germany)  
  
10:40 **Pause**  
11:10 **High Strength Steels in the Construction of Penstocks for Hydropower Plants in Austria - Material Requirements and Processing Experience**  
E. Hofer, G. Auberger (MCE), R.H. Stamberger (VA Tech), P. Schimboeck, (VA Grobblech), R. Rauch (VA Stahl) Austria  
11:40 **Microstructure and Toughness of 950MPa High Strength Weld Metals**  
J. Liao, H. Kametani, H. Okada (Kurimoto Ltd, Japan), K. Ikeuchi (JWRI, Japan)  
12:00 **Hydrogen-Risk potential when welding unalloyed high-strength steels**  
M. Fiedler, D. Schafzahl, J. Fischer, H. Königshofer, G. Posch, W. Berger (Böhler Welding Austria)  
12:20 **Hydrogen Permeation Data and Related Material Properties in High Strength Steels**  
Th. Böllinghaus, P. Zimmer (BAM, Germany)  
12:40 **Controlled Hammer-Peening on a restrained A514 (S690Q) Weldment**  
J.-L. Fihey, R. Simoneau, D. Thibault, J. Lanteigne, H. Nasri, Y. Laroche (Inst. de Recherche d'Hydro-Québec, Canada)  
13:00 **Advanced non destructive testing techniques (NDT) on high pressurised hydro pipes**  
S. Kooops (Röntgen Technische Dienst B.V., The Netherlands)  
  
13:20 **Lunch**  
14:30 **Panel Discussion**  
16:00 **End**  
  
17:00 **Bus-Tour: "Styrian Wine Area"** including Wine tasting and Dinner (€50,- per person; return 22:00)