

Development of Web-based Metal Property and Metal Information Databases

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Introduction

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Metal Property Databases

The metal property databases described here include the High Temperature Properties and General Properties of metals in the room temperature. The flow stress database, as one of the major properties of metal in hot forming, is only summarized here and will be further expanded in a separate section.

In order for user to easily access the technical data, Metal Pass provides shortcut web addresses for the major databases. Metal Pass has near 200 domain names that serve as shortcut URLs or address for satellite websites, see www.metalpass.com/services/shortcuts.aspx. A satellite website is a website focusing on a given topic but eventually links into the main site www.metalpass.com. As examples, www.metaldata.com links to the Databank, which the metal property databases belong to, and www.flowstress.com leads to the cover page of flow stress database.

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General Properties

General Properties consist of major room temperature properties for a large selection of steel grades, about 2000 counts. The user screen is showed in **Figure 2**. When user selects a category, the Sub_Category box will be filled with the relevant list. After clicking on a Sub_Category item, the corresponding grades will then fill in the Grade box. When a grade is clicked, the available property items are displayed. Selecting an item would either lead to the data screen if already logged in, or the login screen.

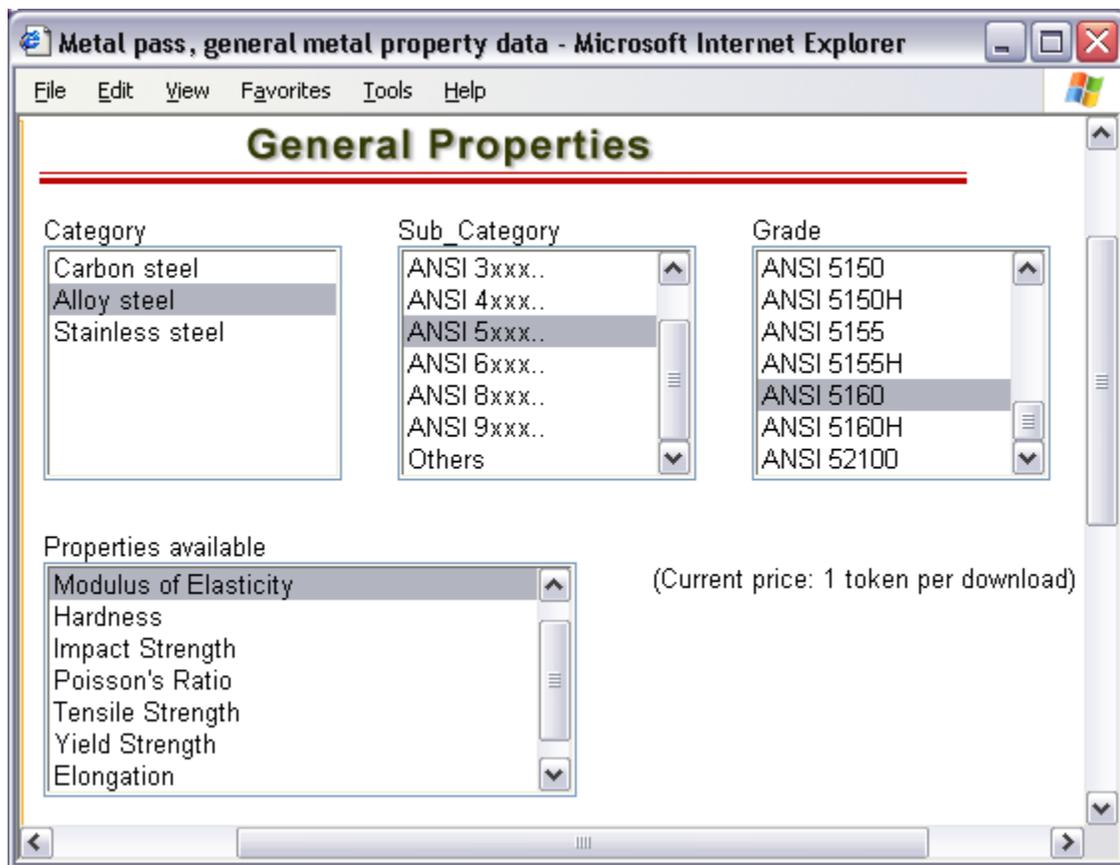


Figure 2 User screen for the General Properties database

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Summary

This paper introduces a list of web-based metal property and metal information databases accessible through metalpass.com. The property databases include Flow Stress, High-Temperature Property and General Property. The information databases consist of Metal Dictionaries (both Tech Terms and Translation), Metal Software, Metal Patents, and Metal Directory, etc. Primary focus is on the metal properties such as flow stress. Data for flow stress are provided with model coefficients. Model types and user screens for the flow stress database are described. Outlines for metal information databases were provided including the extensions of the information database with short papers and model-based software suites.

References

- [1] B. Li and J. Nauman, Significance and development of a next-generation Level 2 model as a metallurgical system. *MS&T Conference, 2008*. October 5-9, 2008. Pittsburgh, PA., USA.
- [2] B. Li, D. Cyr and P. Bothma: Level 2 Model Improvements at Evraz Oregon Steel Mills. *AISTech 2009*. May 4-7, 2009. St. Louis, Mo., USA.
- [3] B. Li and J. Nauman: Metallurgical, modeling and software engineering issues in the further development of the steel mill Level 2 models. *AISTech 2008*. May 5–8, 2008. Pittsburgh, PA, USA.
- [4] B. Li: Flow Stress. Online at www.metalpass.com/flowstress. Metal Pass LLC, Pittsburgh, PA, USA. Accessed in June 2009.
- [5] B. Li: High Temperature Properties. Online at www.metalpass.com/hit. Metal Pass LLC, Pittsburgh, PA, USA. Accessed in June 2009.
- [6] B. Li: General Properties. Online at www.metalpass.com/general. Metal Pass LLC, Pittsburgh, PA, USA. Accessed in June 2009.
- [7] Suzuki, et al, *Studies on the Flow Stress of Metal and Alloys*. University of Tokyo. 1968.