



## Bodycote Increases Commitment to ITER Project in Japan

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Nagoya, Japan - UK-based Bodycote plc, the world's leading provider of thermal processing services, has begun to accept orders in Japan for future work related to International Thermonuclear Experimental Reactor (ITER).

ITER is an international research project dedicated to testing the feasibility of fusion power. The device will trap hydrogen isotopes in magnetic fields and heat them to around 100 million degrees Celsius. At that temperature, the hydrogen will fuse to form helium, releasing neutrons and energy in the process. ITER could become a second major source of atomic energy besides fission. Mission-critical components inside the ITER such as the blanket system require Hot Isostatic Pressing (HIP) in order to shield the reactor from gases as hot as the center of the sun.

"Bodycote is the largest provider of HIP services in the world so it is natural for us to offer our cutting-edge technology to all ITER suppliers, regardless of location," said Dr. Stephen J. Mashl, Global Director of Research and Development. "We expect to process orders starting in 2013 and have been actively involved in ongoing, international, trials and development work. Bodycote has a long-term commitment to the commercialization of ITER over the next 10-20 years."

"As the Japan government is one of the largest backers of the ITER project, Bodycote Japan K.K. is fully committed to serving the heat treatment needs of Japanese manufacturers," commented Mr. Julian Bashore, Representative Director – Japan. "We will also be offering our HIP services to ITER suppliers in Korea and China." While Bodycote Japan was incorporated in March 2008, Bodycote's participation in ITER dates back to 1995 when Bodycote-Europe and Bodycote-U.S. began working together on the application of Hot Isostatic Pressing to the production of first wall blanket modules.

### **About Bodycote**

Founded in 1923, Bodycote plc offers premier metallurgical services at more than 300 facilities in 35 countries worldwide. Headquartered in Macclesfield, UK, Bodycote also provides material testing services. Sales in 2007 exceeded US\$1 billion. Bodycote Japan K.K. is headquartered in Nagoya. For more information, visit [www.bodycote.co.jp](http://www.bodycote.co.jp)

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This 1.63 meter diameter HIP unit in Camas (Washington) is an example of the type of large, sophisticated equipment needed to process parts for the ITER project in a cost effective manner.



(a)



(b)

Front, (a), and rear, (b) views of a SUS316LN stainless steel base for the ITER first wall blanket module. This part weighs approximately 4500 kg and has nominal dimensions of 2000 x 900 x 500 mm. This part was produced using a technology known as HIP PM Near Net Shape fabrication, a specialty of Bodycote's HIP group. The technique involves the design and fabrication of a complex capsule using sheet metal. The complex internal cooling gallery is built into the component by incorporating tubing into the capsule design. The finished capsule assembly is then filled with 316LN powder under controlled conditions, sealed, and then hot isostatically pressed to full density. After capsule removal and finish machining, the part is ready for cladding with the copper alloy intermediate layer and the application of beryllium tiles. Capsule design, fabrication, filling and hot isostatic pressing was all carried out by Bodycote HIP – Surahammar, Sweden.

Photos from : [http://www.efda.org/the\\_iter\\_project/project-blanket\\_module.htm](http://www.efda.org/the_iter_project/project-blanket_module.htm)