

# OsseoSpeed®

## —more bone more rapidly

### What is OsseoSpeed?

OsseoSpeed is a moderately rough implant surface derived from a grit blasted titanium surface (TiOblast) with an additional chemical treatment. The surface characteristics show incorporation of small amounts of fluoride ions into the titanium oxide layer<sup>1-7</sup>, a distinct microscale pattern and a unique topography<sup>1, 2, 4, 8-12</sup>. Chemical and physical properties of the OsseoSpeed surface have been thoroughly investigated and reported in the scientific literature<sup>1, 3, 8, 10, 11, 13-21</sup>. The OsseoSpeed surface was introduced on the implants in the Astra Tech Implant System in 2004\*.

### Extensive scientific evidence

Numerous publications have reported similar<sup>22-25</sup> or increased bone formation and stronger bone-implant contact at the OsseoSpeed surface compared to its ancestors (TiOblast and machined titanium surfaces)<sup>26-33</sup> at shorter healing times<sup>34-36</sup>, results which are also confirmed through human histology analyses<sup>37-40</sup>, and in clinical studies<sup>41, 42</sup>.

The performance of the OsseoSpeed surface is documented in various experimental models with different focus: *In vivo* models<sup>6, 43-73</sup> and *In vitro* models<sup>5, 20, 74-85</sup>. During the early healing, clinical studies\*\* report on unchanged implant stability quotient (ISQ) values and shorter healing times for OsseoSpeed implants<sup>41, 42, 86-88</sup>. In the long-term follow-up, data on OsseoSpeed implants shows stable or increasing ISQ values<sup>89-91</sup> and well maintained marginal bone<sup>92</sup>—in fact, even better maintained marginal bone when compared to major competitors' surfaces<sup>92</sup>.

### Improved osseointegration

Factors such as enhanced osteoblast differentiation<sup>2, 7, 26, 75, 93, 94</sup>, biocompatibility<sup>15, 95-97</sup> and thrombogenic properties<sup>8</sup> of the OsseoSpeed surface have been attributed to the improved and more rapid osseointegration<sup>26-36, 41, 42, 86-88</sup>.

\*OsseoSpeed was introduced on DS PrimeTaper in 2021

\*\*For information on OsseoSpeed and Astra Tech Implant System in clinical use, please refer to [www.dentsplysirona.com/science](http://www.dentsplysirona.com/science)

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### About Dentsply Sirona Implants

Dentsply Sirona Implants offers comprehensive solutions for all phases of implant therapy, including Ankylos®, Astra Tech Implant System® and Xive® implant lines, digital technologies, such as Atlantis® patient-specific solutions and Simplant® guided surgery, Symbios® regenerative solutions, and professional and business development programs, such as STEPPS™. Dentsply Sirona Implants creates value for dental professionals and allows for predictable and lasting implant treatment outcomes, resulting in enhanced quality of life for patients.

### About Dentsply Sirona

Dentsply Sirona is the world's largest manufacturer of professional dental products and technologies, with a 130-year history of innovation and service to the dental industry and patients worldwide. Dentsply Sirona develops, manufactures, and markets a comprehensive solutions offering including dental and oral health products as well as other consumable medical devices under a strong portfolio of world class brands. As The Dental Solutions Company™, Dentsply Sirona's products provide innovative, high-quality and effective solutions to advance patient care and deliver better, safer and faster dentistry. Dentsply Sirona's global headquarters is located in York, Pennsylvania, and the international headquarters is based in Salzburg, Austria. The company's shares are listed in the United States on NASDAQ under the symbol XRAY.

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