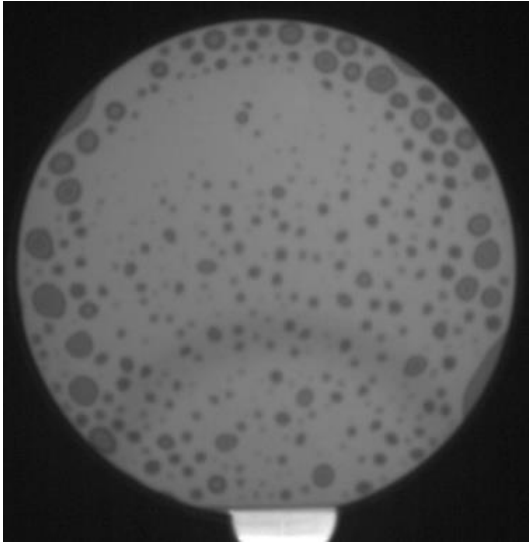


IRIS - IR Wafer Bond Inspection & Maszara Bond Strength tool



Full Area IR inspection of bonded wafers



IR inspection is a quick & easy way of non-destructively inspecting a full area bonded wafer pair for voids, due to poor bonding or particles.

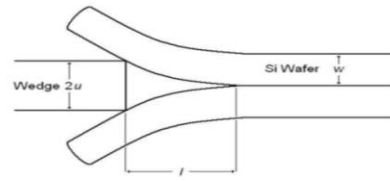
Rapidly inspect wafers up to 200mm ϕ

- Minimum detectable void height 250 nm
- Minimum detectable lateral void visibility 600 μ m

NEW IRIS benchtop analytical tool

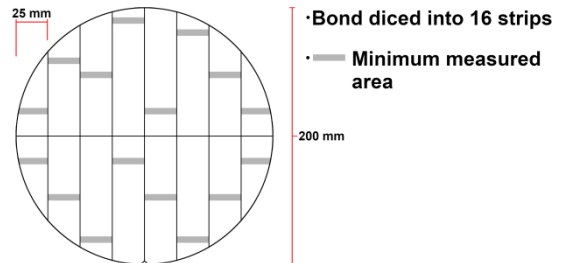


- Testing carried out on 25mm wide strips. Up to 200mm wafers
- Speeds up bond strength measurements & analysis
- IRIS bond strength measurements verified against SEMI MS5-0813 "Micro Chevron Testing" standard



Automated Maszara Bond strength test tool

- **IRIS controls** insertion *to minimise sample failure*
- Angle of insertion – **fixed and controlled by design**
- Edge effects – **IRIS takes measurements over the whole wafer**
- Eliminates measurement uncertainties due to influence of operator skill and technique – **IRIS provides repeatable blade insertion**
- Stress corrosion - **IRIS can move the blade at a speed faster than the stress corrosion progression thus eliminating errors due to stress corrosion**
- Compatible with un-patterned wafers – unlike the Chevron bond strength method which requires specifically patterned silicon wafers
- Eliminates operator influence in manual Maszara tests providing more reproducible results
- Safer for the operator – no manual handling
- Produces full area wafer bond strength maps



Automatic analysis of measurement data to produce bond strength maps

- Can measure bond strength up to 2.5 Jm⁻²
- The bond strength measurement supports many combination of materials e.g. silicon (<100> <111>), borosilicate glass, sapphire, the user can enter elastic modulus for any other material
- Analytical software continuously records the wafer strip position & extracts crack length data via automatic image analysis

Bond Strength	Chevron Test	IRIS Tool
Average (J M ⁻²)	2.09	2.25
% St Dev	14	14