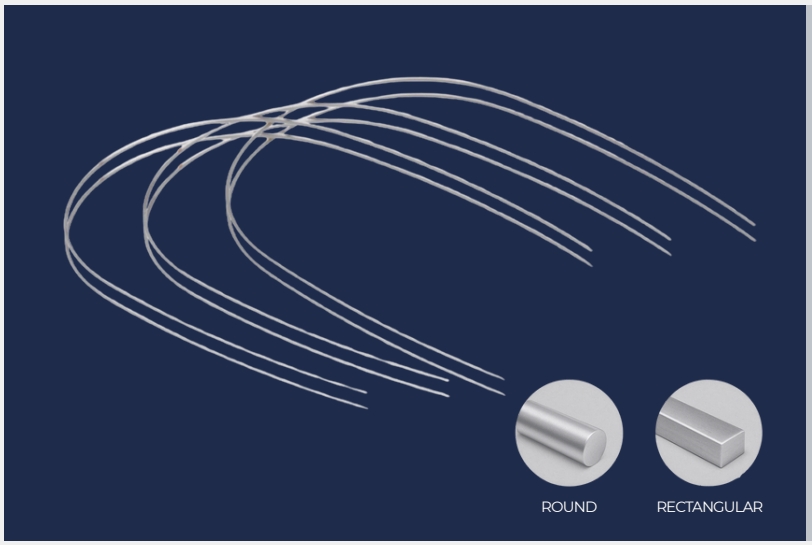
Technical Data Sheet

Z Wire
Stainless Steel Archwires

Z Wire
NiTi Thermal Activated Archwires

Z Wire
NiTi Super Elastic Archwires



Product Description







ORTHODONTIC ARCHWIRES

Crafted with advanced Japanese metallurgical technology and manufactured under strict quality standards, our orthodontic arch wires are engineered to support every stage of treatment–from initial alignment to precise finishing. Available in both round and rectangular cross-sections, each wire delivers customized biomechanical performance for specific clinical needs.

With exceptional flexibility, consistent force delivery, and precise shape memory, our wires ensure predictable tooth movement and long-term stability. The ultra-smooth surface minimizes friction for efficient sliding mechanics, while high resilience reduces breakage and chair time. Whether stainless steel, super elastic, or thermal-activated NiTi, every wire reflects a perfect balance of Japanese precision, strength, and patient comfort.

support@zelectiondental.com
Zelectiondental.com

© 2024 All Rights Reserved. Developed By Smartmed Group 2019

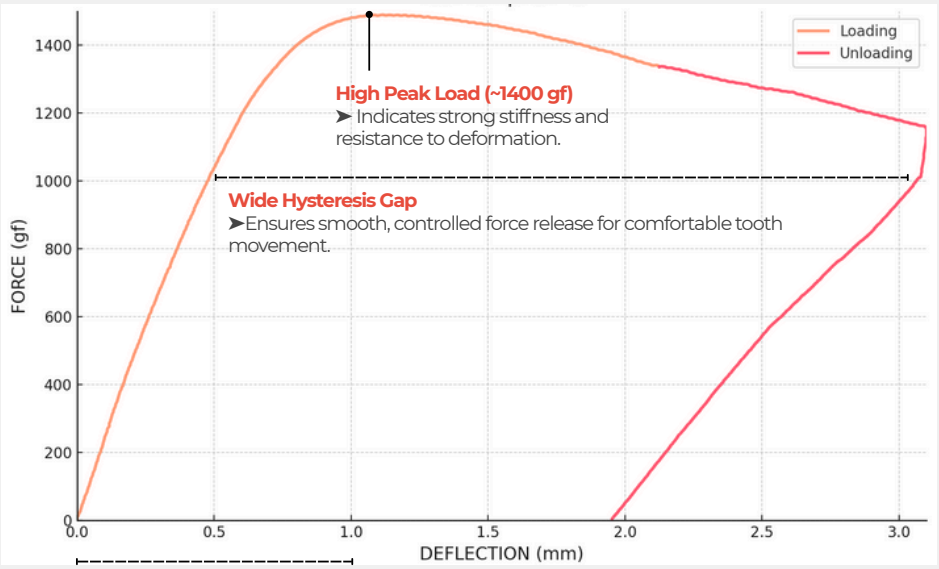
▪ Z Wire

Stainless Steel Archwires

Crafted from premium 304VSS medical-grade stainless steel, Z-MAT archwires are engineered to deliver superior tensile strength, optimal formability, and precise force control. Ideal for detailed adjustments, the wires maintain performance integrity under clinical temperature (37°C), minimizing fracture risk and ensuring smooth, consistent tooth movement throughout treatment.

WIRE FORCE CHART

Force–Deflection Curve of Z-MAT Stainless Steel Archwire (37°C)



Linear Elastic Zone (~0–1 mm)
➤ Provides controlled initial force for gentle tooth movement.

Key Features

- Medical-grade 304VSS stainless steel
- Consistent force delivery under intraoral conditions (37 °C)
- Ultra-polished surface for reduced friction and efficient sliding
- Laser-etched center mark for precise placement
- Tested and validated by SmartLab, KMUTT



STAINLESS STEEL ARCHWIRES

Dimension (Inch)	Natural	
	Upper	Lower
Rectangular		
0.016"x0.016"	SZAW-1616U	SZAW-1616L
0.017"x0.022"	SZAW-1722U	SZAW-1722L
0.018"x0.025"	SZAW-1825U	SZAW-1825L

All codes indicate upper (U) and lower (L) arch forms, available in natural shape.

support@zelectiondental.com
Zelectiondental.com

© 2024 All Rights Reserved. Developed By Smartmed Group 2019

▪ Z Wire
Thermal NiTi Archwires

Crafted from premium thermal-activated NiTi alloy, Z-MAT Thermal Archwires provide excellent shape memory and temperature-sensitive force. Activated by body heat, they deliver a gentle initial force that gradually increases to optimal levels at oral temperature. This thermal responsiveness ensures enhanced comfort, reduced chairside adjustments, and consistent clinical results across all treatment phases.

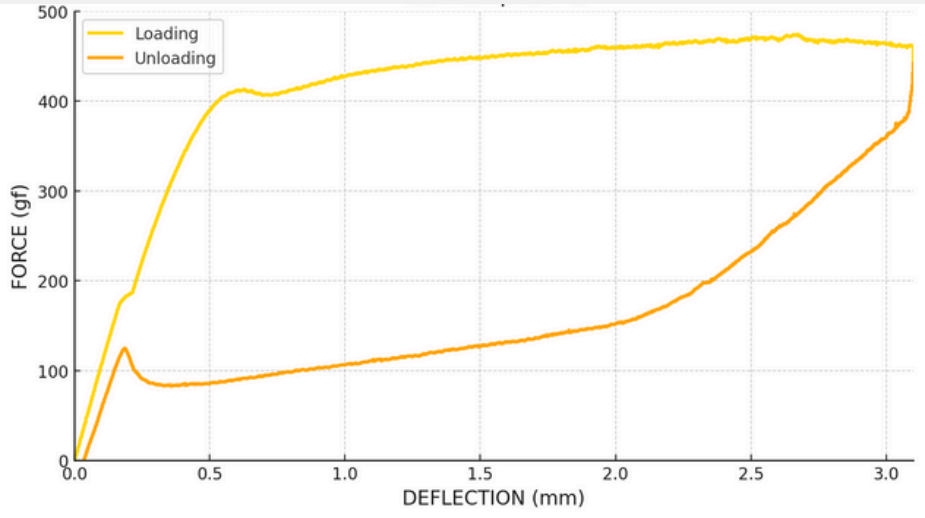
Key Features

- Continuous light force with high elasticity
- Optimized for initial to working stages of treatment
- Superelastic performance with smooth unloading
- Polished surface enhances sliding efficiency
- Tested and validated by SmartLab, KMUTT

WIRE FORCE CHART

- Flat unloading plateau → indicates constant force delivery over time
- Low initial force (~100 gf) → suitable for sensitive teeth and crowding
- Gentle slope at loading → smooth engagement and minimal pain

Force–Deflection Curve of Thermal NiTi Archwire (0.018" × 0.025") (37°C)



THERMAL NITI ARCHWIRES

Dimension (Inch)	Natural	
	Upper	Lower
Rectangular		
0.016"x0.016"	TZAW-1616U	TZAW-1616L
0.017"x0.022"	TZAW-1722U	TZAW-1722L
0.018"x0.025"	TZAW-1825U	TZAW-1825L

All codes indicate upper (U) and lower (L) arch forms, available in natural shape.



support@zelectiondental.com

Zelectiondental.com

© 2024 All Rights Reserved. Developed By Smartmed Group 2019

▪ Z Wire
NiTi Archwires

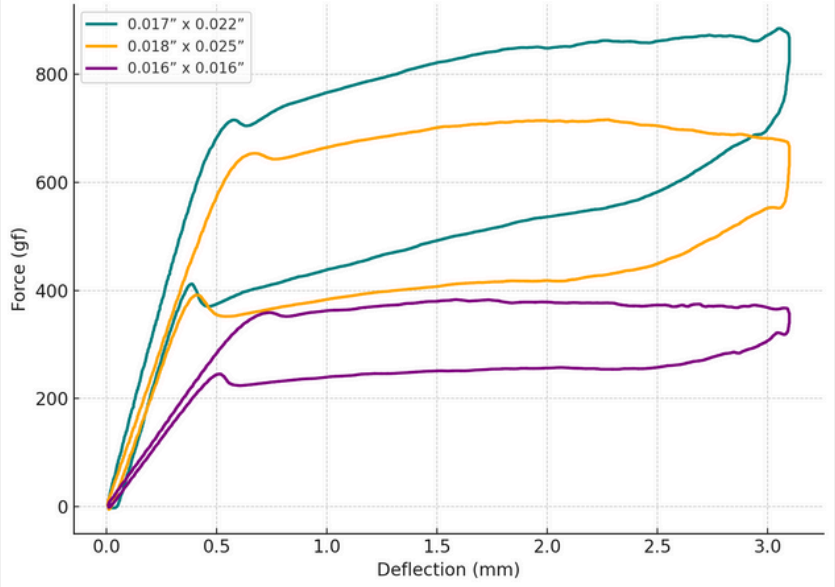
Crafted from premium medical-grade Nickel-Titanium alloy, Z-MAT NiTi archwires deliver superior elasticity, shape memory, and continuous light force for optimal tooth movement. Their high flexibility and polished surface reduce patient discomfort, while enabling precise, predictable performance throughout all treatment phases.

Key Features

- Continuous light force with high elasticity
- Optimized for initial to working stages of treatment
- Superelastic performance with smooth unloading
- Polished surface enhances sliding efficiency
- Tested and validated by SmartLab, KMUTT

WIRE FORCE CHART

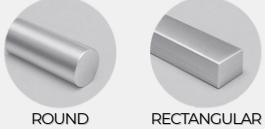
Force–Deflection Curves of NiTi Archwires (37°C) with various cross-sectional dimensions 0.016”×0.016”, 0.017”×0.025”, and 0.019”×0.025”



Dimension (Inch)	Natural	
	Upper	Lower
Round		
0.012"	ZAW-12U	ZAW-12L
0.014"	ZAW-14U	ZAW-14L
0.016"	ZAW-16U	ZAW-16L
0.018"	ZAW-18U	ZAW-18L
Rectangular		
0.016"x0.016"	ZAW-1616U	ZAW-1616L
0.016"x0.022"	ZAW-1622U	ZAW-1622L
0.017"x0.025"	ZAW-1725U	ZAW-1725L
0.019"x0.025"	ZAW-1925U	ZAW-1925L

NITI ARCHWIRES





support@zelectiondental.com
Zelectiondental.com

© 2024 All Rights Reserved. Developed By Smartmed Group 2019