



# MECHANICAL AND PHYSICAL PROPERTIES OF THE EVA-LAST DECKING RANGE

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## Introduction

This document provides a high-level summary of key performance areas, of Eva-last's various technologies, including material properties, surface characteristics, flexural behavior, fire reaction ratings, bio-degradation performance, and fastener compatibility. The tables presented here are simplified for quick reference only and should not be treated as definitive.

Due to their abbreviated nature, these summaries may omit critical context or caveats and may lead to misinterpretation if used in isolation. For comprehensive information - including referenced test reports, test methods, test conditions, pass/fail criteria, and performance limitations - please refer to the full product Technical Data Sheets available at: <https://www.eva-last.com/us/downloads/>

Use of this data without full context may result in inappropriate product selection or non-compliant specification. Always verify performance characteristics against your application requirements before proceeding.

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| 01 - MATERIAL PROPERTIES               |                                     |                                   |                                        |
|----------------------------------------|-------------------------------------|-----------------------------------|----------------------------------------|
| PROPERTY                               | TEST METHOD                         | RESULTS                           |                                        |
| <b>Specific Gravity</b>                | <b>Method</b>                       | <b>SG</b>                         |                                        |
| Infinity                               | EN 15 534 (Converted from Density)  | 1.2 to 1.3*                       |                                        |
| Apex                                   | ASTM D2395 (Converted from Density) | 0.65 to 0.75*                     |                                        |
| Apex Plus                              |                                     | 0.65 to 0.9*                      |                                        |
| Pioneer                                |                                     | 0.65 to 0.9*                      |                                        |
| <b>Modulus of Elasticity</b>           | <b>ASTM D6109</b>                   | <b>MPa</b>                        | <b>lbf/in<sup>2</sup></b>              |
| Infinity                               | ASTM D7032 - 16" spans              | 3 351                             | 485 895                                |
| Apex                                   | ASTM D7032 - 12" spans              | 1 799                             | 260 841                                |
| Apex Plus                              | ASTM D7032 - 24" spans              | 2 938                             | 426 121                                |
| Pioneer STFM105A                       | ASTM D7032 - 22.5" spans            | 3 131                             | 454 066                                |
| <b>Modulus of Rupture</b>              | <b>ASTM D6109</b>                   | <b>MPa</b>                        | <b>lbf/in<sup>2</sup></b>              |
| Infinity                               | ASTM D7032 - 16" spans              | 17.8                              | 2 581                                  |
| Apex                                   | ASTM D7032 - 12" spans              | 28.8                              | 4 176                                  |
| Apex Plus                              | ASTM D7032 - 24" spans              | 44.9                              | 6 512                                  |
| Pioneer STFM105A                       | ASTM D7032 - 22.5" spans            | 59.8                              | 8 671                                  |
| <b>Linear Coefficient of Expansion</b> | <b>Method</b>                       | <b>x 10<sup>-6</sup> mm/mm/°C</b> | <b>x 10<sup>-6</sup> inch/inch/ °F</b> |
| Infinity                               | ISO 11359-1:2014                    | 45.0                              | 22.0                                   |
| Apex                                   | ASTM D696-16                        | 46.2                              | 25.6                                   |
| Apex Plus                              | EN 15534-1:2014 or ISO 11359-2:2021 | 33.4                              | 18.5                                   |
| Pioneer                                | EN 15534-1:2014 or ISO 11359-2:2021 | 33.4                              | 18.5                                   |

\*Inferred data. See TDS for more information

| 02 - SLIP RESISTANCE PROPERTIES       |                                                           |                               |              |
|---------------------------------------|-----------------------------------------------------------|-------------------------------|--------------|
| PROPERTY                              | TEST METHOD                                               | RESULTS                       |              |
| <b>Coefficient of static friction</b> | <b>AS 4586:2013 Appendix B</b>                            | <b>Value</b>                  | <b>Class</b> |
| Apex (L)                              | Slider 96 - Dry floor friction test classification        | 0.95                          | D1           |
| Pioneer (3D texture B)                |                                                           | 0.95                          | D1           |
| <b>Pendulum classification</b>        | <b>(AS 4586 - A)</b>                                      | <b>Class</b>                  |              |
| Infinity (CL1)                        | Slider 55 - Wet pendulum test classification              | P2                            |              |
| Apex (L)                              |                                                           | P5                            |              |
| Apex Plus (L)                         |                                                           | P5*                           |              |
| Pioneer (3D texture B)                |                                                           | P3                            |              |
| <b>ABC rating</b>                     | <b>(Slider 55, bare foot) (AS 4586 - C)</b>               | <b>Class</b>                  |              |
| Infinity (CL1,L,QR)                   | Wet barefoot inclining platform test                      | A                             |              |
| Apex (L)                              |                                                           | C                             |              |
| Apex Plus                             | Israeli Standard TI 2279 (Equivalent rating to AS 4586-C) | C                             |              |
| Pioneer                               | Wet barefoot inclining platform test                      | A                             |              |
| <b>R-Rating</b>                       | <b>(Slider 96 - Shod foot) (AS 4586 - D)</b>              | <b>Class</b>                  |              |
| Infinity                              | Pendulum test conversion provided by 3rd party            | R10                           |              |
| Apex (L)                              | Oil wet inclining platform test                           | R11                           |              |
| Apex Plus                             | Israeli Standard TI 2279 (Equivalent rating to AS 4586-D) | R12 Longitudinal, R13 Lateral |              |
| Pioneer                               | Oil wet inclining platform test                           | R10                           |              |

\*Inferred data. See TDS for more information

### 03 - FLEXURAL PROPERTIES

| PROPERTY                                                                 | TEST METHOD            | RESULTS                                    |                                              |
|--------------------------------------------------------------------------|------------------------|--------------------------------------------|----------------------------------------------|
| <b>Stair tread performance - Concentrated load performance</b>           | <b>ASTM D7032</b>      | <b>Ultimate load   Deflection at 1.5kN</b> | <b>Ultimate load   Deflection at 333 lbf</b> |
| Infinity                                                                 | ASTM D7032 - 16" spans | 3 760 N   2.88 mm                          | 845 lbf   0.113"                             |
| Infinity - Stair tread board 325 x 30 mm (12.8" x 1.2")                  | ASTM D7032 - 16" spans | 8 986N   3.00 mm                           | 2 020 lbf   0.118"                           |
| Apex                                                                     | ASTM D7032 - 12" spans | 5 922N   2.65 mm                           | 1 331 lbf   0.104"                           |
| Pioneer - STFM101 A and STFM104A                                         | ASTM D7032 - 12" spans | 8012N   2.51 mm                            | 1 801 lbf   0.099"                           |
| Pioneer - STFM107A and STFM105A                                          | ASTM D7032 - 12" spans | 10 062N   2.13 mm                          | 2262 lbf   0.099"                            |
| <b>Deflection load at 1/180 L deflection (Unadjusted allowable load)</b> | <b>ASTM D7032</b>      | <b>N</b>                                   | <b>lbf</b>                                   |
| Infinity                                                                 | ASTM D7032 - 16" spans | 1 118                                      | 251                                          |
| Apex                                                                     | ASTM D7032 - 12" spans | 1 129                                      | 254                                          |
| Pioneer - STFM101 A and STFM104A                                         | ASTM D7032 - 12" spans | 404                                        | 90.8                                         |
| Pioneer - STFM107A and STFM105A                                          | ASTM D7032 - 12" spans | 498                                        | 112                                          |
| <b>Deck load span rating</b>                                             | <b>ASTM 7032</b>       | <b>Load rating at span</b>                 | <b>Load rating at span</b>                   |
| Infinity 0.9" family                                                     | ASTM 7032              | 4.79 kN/m <sup>2</sup> at 406 mm           | 100psf at 16" span                           |
| Infinity I-Series 1" thick family                                        |                        | 4.79 kN/m <sup>2</sup> at 406 mm           | 100psf at 16" span                           |
| Apex                                                                     |                        | 4.79 kN/m <sup>2</sup> at 305 mm           | 100psf at 12" span                           |
| Pioneer - STFM101 A and STFM104A                                         |                        | 4.79 kN/m <sup>2</sup> at 571.5 mm         | 100psf at 22.5" span                         |
| Pioneer - STFM107A and STFM105A                                          |                        | 4.79 kN/m <sup>2</sup> at 571.5 mm         | 100psf at 22.5" span                         |

## 04 - FIRE REACTION PROPERTIES

| PROPERTY                                                                                                   | TEST METHOD                                                                  | RESULTS                             |                           |
|------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|-------------------------------------|---------------------------|
| <b>Flame spread Index</b>                                                                                  |                                                                              |                                     |                           |
|                                                                                                            | ASTM E84                                                                     | Result                              | FSI Classification (<200) |
| Infinity                                                                                                   | E84                                                                          | 110                                 | Pass - Class C            |
| Apex                                                                                                       |                                                                              | 35                                  | Pass - Class B            |
| Pioneer                                                                                                    |                                                                              | 125                                 | Pass - Class C            |
| <b>Smoke development index</b>                                                                             |                                                                              |                                     |                           |
|                                                                                                            | ASTM E84                                                                     | Result                              | SDI Classification (<450) |
| Infinity                                                                                                   | E84                                                                          | 500                                 | Failed                    |
| Apex                                                                                                       |                                                                              | 1300                                | Failed                    |
| Pioneer                                                                                                    |                                                                              | 1200                                | Failed                    |
| <b>CA SFM 12-7A-4 Code compliance for use in all CA Wildland Urban Interface (WUI) fire severity zones</b> |                                                                              | <b>Decking alternative method A</b> |                           |
|                                                                                                            |                                                                              | Result                              |                           |
| Apex                                                                                                       | Peak heat release rate, sustained flaming and falling particles requirements | Pass                                |                           |



## 05 - BIODEGRADATION AND WEATHERING

| PROPERTY                                  | TEST METHOD            | RESULTS           |                    |
|-------------------------------------------|------------------------|-------------------|--------------------|
| <b>Termite resistance rating</b>          |                        |                   |                    |
|                                           | ISO 17025              | Result            |                    |
| Infinity                                  | ISO 17025              | Pass              |                    |
| Apex                                      |                        | Test not required |                    |
| Apex Plus                                 |                        | Test not required |                    |
| Pioneer                                   |                        | Test not required |                    |
| <b>Formosan termite resistance rating</b> |                        |                   |                    |
|                                           | ISO 17025              | Result            |                    |
| Infinity                                  | ISO 17025              | Pass              |                    |
| Apex                                      |                        | Test not required |                    |
| Apex Plus                                 |                        | Test not required |                    |
| Pioneer                                   |                        | Test not required |                    |
| <b>Fungus decay resistance</b>            |                        |                   |                    |
|                                           | ISO 17025              | Result            |                    |
| Infinity                                  | ISO 17025              | Pass              |                    |
| Apex                                      |                        | Test not required |                    |
| Apex Plus                                 |                        | Test not required |                    |
| Pioneer                                   |                        | Test not required |                    |
| <b>Weathering</b>                         |                        |                   |                    |
|                                           | ASTM G155 or ASTM G154 | Result            |                    |
| Technology                                | Color                  | Hours             | Change in color ΔE |
| Infinity                                  | Baltic Nero            | 4 000 hours       | 2.46               |
|                                           | Caribbean Coral        | 4 000 hours       | 2.48               |
| Apex                                      | Arctic Birch           | 4 000 hours       | 1.3                |
|                                           | Brazilian Teak         | 3 000 hours       | 1.1**              |
|                                           | Caribbean Coral        | 3 000 hours       | 1.72**             |
|                                           | Hawaiian Walnut        | 3 000 hours       | 2.26**             |
| Pioneer                                   | Grey Fraxinus          | 4 000 hours       | 3.21**             |
|                                           | Exotic Canary Wood     | 4 000 hours       | 3.39               |

\*\*Internal results

## 06 - FASTENER PERFORMANCE TESTING - ASTM D1032 - ULTIMATE PULL-THROUGH (SF 3.0)

| PROPERTY                                            | TEST METHOD                                                               | RESULTS   |            |
|-----------------------------------------------------|---------------------------------------------------------------------------|-----------|------------|
| <b>Timber structure</b>                             | <b>Top fixed with HULK composite deck screw M5.0 x 63 mm (#10 x 2.5")</b> | <b>kN</b> | <b>lbf</b> |
| Infinity - STGJ03AEN (I-Series square edge)         | Span at 406 mm (16")                                                      | 0.2       | 45         |
| Infinity - STGJ30 (Square edge)                     | Span at 406 mm (16")                                                      | 1.9       | 420        |
| Apex - STTHM102 (Square edge)                       | Span at 305 mm (12")                                                      | 0.6       | 134.9      |
| Pioneer - STFM 101A,STFM104A, STFM105A and STFM107A | Span at 571.5 mm (22.5")                                                  | 2.7       | 597        |
| <b>Metal structure</b>                              | <b>Top fixed with HULK metal deck screw M4.8 x 45 mm (#10 x 1.75")</b>    | <b>kN</b> | <b>lbf</b> |
| Infinity - STGJ03AEN (I-Series square edge)         | Span at 406 mm (16")                                                      | 0.9       | 203        |
| Pioneer - STFM 101A,STFM104A, STFM105A and STFM107A | Span at 571.5 mm (22.5")                                                  | 2.9       | 651        |



## 07 - FASTENER PERFORMANCE TESTING - ASTM E330 - ALLOWABLE UPLIFT CAPACITY (3.0 SF)

| PROPERTY                                            | TEST METHOD                                                                               | RESULTS                  |            |
|-----------------------------------------------------|-------------------------------------------------------------------------------------------|--------------------------|------------|
| <b>Timber structure</b>                             | <b>Top fixed with HULK composite deck screw M5.0 x 63 mm (#10 x 2.5")</b>                 | <b>kN/mm<sup>2</sup></b> | <b>psf</b> |
| Infinity - STGJ02AEN I-Series                       | Span at 406 mm (16")                                                                      | 7.2                      | 150        |
| Infinity - STGJ03AEN I-Series                       | Span at 406 mm (16")                                                                      | 6.9                      | 144.1      |
| Infinity - STGJ30                                   | Span at 406 mm (16")                                                                      | 7.2                      | 150        |
| Apex - STTHM102                                     | Span at 305 mm (12")                                                                      | 7.2                      | 150        |
| Pioneer - STFM 101A,STFM104A, STFM105A and STFM107A | Span at 571.5 mm (22.5")                                                                  | 7.2                      | 150        |
| <b>Timber structure (SG - &gt; 0.42)</b>            | <b>Hidden fastener Chain collated deck clip with M4.2 x 40 mm (#8 x 1.75") clip screw</b> | <b>kN/mm<sup>2</sup></b> | <b>psf</b> |
| Pioneer - STFM101 A and STFM104A                    | Span at 621.5 mm (24.5")                                                                  | 7.2                      | 150        |
| Pioneer - STFM107A and STFM105A                     | Span at 621.5 mm (24.5")                                                                  | 5.6                      | 117        |
| <b>Timber structure (SG - &gt;0.42)</b>             | <b>Hidden fastener S9 clip with M4.2 x 40 mm (#8 x 1.75") clip screw</b>                  | <b>kN/mm<sup>2</sup></b> | <b>psf</b> |
| Infinity - STGJ02AEN with STGJ04AE I-Series         | Span at 406 mm (16")                                                                      | 4.9                      | 102.4      |
| Apex - STTHM102                                     | Span at 305 mm (12")                                                                      | 4.1                      | 150        |
| <b>Metal structure</b>                              | <b>Top fixed with HULK metal deck screw M4.8 x 45 mm (#10 x 1.75")</b>                    | <b>kN/mm<sup>2</sup></b> | <b>psf</b> |
| Infinity - STGJ02AEN I-Series                       | Span at 406 mm (16")                                                                      | 7.4                      | 154        |
| Infinity - STGJ03AEN I-Series                       | Span at 406 mm (16")                                                                      | 6.9                      | 144        |
| Apex - STTHM102                                     | Span at 305 mm (12")                                                                      | 7.2                      | 150        |
| Pioneer - STFM 101A,STFM104A, STFM105A and STFM107A | Span at 571.5 mm (22.5")                                                                  | 7.2                      | 150        |
| <b>Metal structure</b>                              | <b>Hidden fastener Chain collated deck clip with M4.2 x 40 mm (#8 x 1.75") clip screw</b> | <b>kN/mm<sup>2</sup></b> | <b>psf</b> |
| Pioneer - STFM101 A and STFM104A                    | Span at 621.5 mm (24.5")                                                                  | 7.2                      | 150        |
| Pioneer - STFM107A and STFM105A                     | Span at 621.5 mm (24.5")                                                                  | 7.2                      | 150        |
| <b>Metal structure</b>                              | <b>Hidden fastener S9 clip with M4.2 x 40 mm (#8 x 1.75") clip screw</b>                  | <b>kN/mm<sup>2</sup></b> | <b>psf</b> |
| Infinity - STGJ02AEN with STGJ04AE I-Series         | Span at 406 mm (16")                                                                      | 4.1                      | 85.6       |
| Apex - STTHM102                                     | Span at 305 mm (12")                                                                      | 7.2                      | 150.4      |

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## Contact information

**Eva-Last**

**Email:** [USAsales@eva-last.com](mailto:USAsales@eva-last.com)

**Website:** <https://www.eva-last.com/us/>