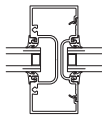
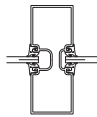
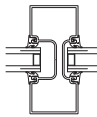
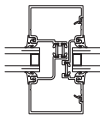


| Product w/ Description | YES 20 Sash Framing A 1" x 2" flush glazed or center glazed sash window system. | YES 40 FS A 1-3/4" x 4" center set, flush glazed, monolithic glazed storefront system with available hinged mullions. | YES 40 FI A 2" x 4" center set, flush glazed framing system developed for 1" insulating glass and other types of infill panels of varying thicknesses. | YES 45 FS A 1-3/4" x 4-1/2" center set, flush glazed, monolithic glazed storefront system with available hinged mullions. |
|------------------------------|---|---|--|---|
| Typical Vertical Detail | | | | |
| Glass Position | Center, Front | Center | Center | Center |
| Applications | Sash Window Punched Openings | Storefront Ribbon Windows Punched Openings | Storefront Ribbon Windows Punched Openings | Storefront Ribbon Windows Punched Openings |
| Glazing Options | Outside Glazed | Outside Glazed | Outside Glazed | Inside Glazed Outside Glazed |
| Infill Options | 3/16", 1/4", 5/16", 3/8", 1/2", 5/8", 3/4", 7/8", & 1" | 1/4" | 1/4", 1/2", 5/8" 3/4", & 1" | 1/4" |
| Thermal System / Performance | No | No | No | No |
| Acoustical Rating | - | - | - | - |
| SSG | No | No | No | No |
| 2-Color Option | No | No | No | No |
| Entrance Integration | No | Yes | Yes | Yes |
| SSG Vent Integration | No | No | No | No |
| ThermaShade® Integration | No | No | No | No |
| Assembly Method | - | Screw Spline | Screw Spline, Shear Block | Screw Spline, Shear Block |
| Hurricane Impact Tested | - | - | - | - |
| Blast Mitigation | - | - | - | - |
| Seismic Drift | - | - | - | - |
| Performance Test Standards | - | ASTM E283, E330, E331 | ASTM E283, E330, E331 AAMA 501 | ASTM E283, E330, E331 AAMA 501 |

See General Notes at end of document.

| Product w/ Description | YES 45 FI A 2" x 4-1/2" center set, flush glazed framing system developed for 1" insulating glass and other types of infill panels of varying thicknesses. | YES 45 CS A 1-3/4" x 4-1/2" center glazed can system to provide the appearance of standard storefront while providing the benefits of a ribbon window system. | YES 45 CI A 2" x 4-1/2" center glazed can system to provide the appearance of standard storefront while providing the benefits of a ribbon window system. | YES 45 FT A 2-1/2" x 4-1/2" thermally broken, center set, flush glazed storefront system for monolithic and insulating glass. |
|------------------------------|--|---|---|---|
| Typical Vertical Detail |  |  |  |  |
| Glass Position | Center | Center | Center | Center |
| Applications | Storefront Ribbon Windows Punched Openings | Storefront Ribbon Windows | Storefront Ribbon Windows | Storefront Ribbon Windows |
| Glazing Options | Inside Glazed Outside Glazed | Inside Glazed Outside Glazed | Inside Glazed Outside Glazed | Inside Glazed Outside Glazed |
| Infill Options | 1/4", 1/2", 5/8" 3/4", & 1" | 1/4" | 1" | 1/4" & 1" |
| Thermal System / Performance | No / CRF _f : 44 U-value: 0.50 btu/hr/ft ² /°F | No | No | Thermally Broken / CRF _f : 60 U-value: 0.46 btu/hr/ft ² /°F |
| Acoustical Rating | STC: 32 (1" IGU), 37 (1" lami) OITC: 27 (1" IGU), 30 (1" lami) | - | - | - |
| SSG | No | No | No | No |
| 2-Color Option | No | No | No | Yes |
| Entrance Integration | Yes | Yes | Yes | Yes |
| SSG Vent Integration | Yes | No | Yes | Yes |
| ThermaShade® Integration | Yes | No | No | No |
| Assembly Method | Screw Spline, Shear Block | Shear Block, Continuous Head and Sill | Shear Block, Continuous Head and Sill | Screw Spline, Shear Block |
| Hurricane Impact Tested | - | - | - | - |
| Blast Mitigation | - | - | - | - |
| Seismic Drift | - | - | - | - |
| Performance Test Standards | ASTM E283, E330, E331 AAMA 501, 1503.1, 1801 NFRC 100 | ASTM E283, E330, E331 ANSI/AAMA 101-93 | ASTM E283, E330, E331 ANSI/AAMA 101-93 | ASTM E 283, E 330, E 331 AAMA 1503 NFRC 100 |

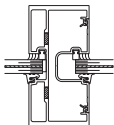
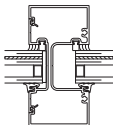
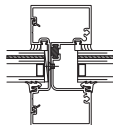
See General Notes at end of document.

| Product w/ Description | YES 45 TU Center Set A 2" x 4-1/2" thermally broken, center set, flush glazed framing system developed for 1" insulating glass. | YES 45 TU Front Set A 2" x 4-1/2" thermally broken front set framing system that maximizes energy performance and provides the aesthetics of a curtain wall. | YES 45 XT A 2"x4-1/2" center set, flush glazed framing system that features a dual thermal barrier design to significantly reduce head transfer and keep internal surfaces warmer. | YES 600 A 1-3/4" x 4-1/2" or 1-3/4" x 6" thermally broken, front loaded storefront system for 1" insulating glass. |
|------------------------------|---|--|--|--|
| Typical Vertical Detail | | | | |
| Glass Position | Center | Front | Center | Front |
| Applications | Storefront Ribbon Windows Punched Openings | Storefront Ribbon Windows Punched Openings | Storefront Ribbon Windows Punched Openings | Storefront Ribbon Windows Punched Openings |
| Glazing Options | Inside Glazed Outside Glazed | Inside Glazed Outside Glazed | Inside Glazed Outside Glazed | Outside Glazed |
| Infill Options | 1/4", 1/2", 5/8" 3/4", & 1" | 1" | 1" | 1/4" & 1" |
| Thermal System / Performance | Thermally Broken / CRF: 57 U-value: 0.42 btu/hr/ft ² /°F | Thermally Broken / CRF: 60 U-value: 0.40 btu/hr/ft ² /°F | Thermally Broken / CRF: 66 U-value: 0.36 btu/hr/ft ² /°F | Thermally Broken / CRF: 78 U-value: 0.44 btu/hr/ft ² /°F |
| Acoustical Rating | STC: 32 (1" ann), 35 (1" lami) OITC: 26 (1" ann), 29 (1" lami) | STC: 32 (1" ann), 36 (1" lami) OITC: 27 (1" ann), 30 (1" lami) | STC: 32 (1" IGU), 36 (1" lami) OITC: 27 (1" IGU), 30 (1" lami) | STC: 32 (1" ann), 37 (1" lami) OITC: 26 (1" ann), 31 (1" lami) |
| SSG | No | Optional | No | Optional |
| 2-Color Option | No | No | No | Yes |
| Entrance Integration | Yes | Yes | Yes | Yes |
| SSG Vent Integration | Yes | No | Yes | No |
| ThermaShade® Integration | Yes | No | Yes | No |
| Assembly Method | Screw Spline, Shear Block | Screw Spline, Shear Block, Vertical Run-Thru Continuous Head and Sill | Screw Spline, Shear Block | Screw Spline, Shear Block |
| Hurricane Impact Tested | - | - | - | - |
| Blast Mitigation | - | - | - | - |
| Seismic Drift | Passed @ 1.62" horizontal displacement (3 cycles) | Passed @ 1.62" horizontal displacement (3 cycles) | - | - |
| Performance Test Standards | ASTM E283, E330, E331 AAMA 501, 501.4, 507, 1503, 1801 NFRC 100 | ASTM E90, E283, E330, E331 AAMA 501, 501.4, 507, 1503, 1801 NFRC 100 | ASTM E283, E330, E331 AAMA 501, 507, 1503, 1801 NFRC 100 | ASTM E283, E330, E331 AAMA 101/I.S.2-97 AAMA 1503, 1801 NFRC 100 |

See General Notes at end of document.

| Product w/ Description | YES 60 FI A 2" x 6" center set, flush glazed framing system developed for 1" insulating glass and other types of infill panels of varying thicknesses | YES 60 TU A 2" x 6" thermally broken flush glazes framing system developed for 1" insulating glass. | YES 60 XT A 2" x 6" center set, flush glazed framing system that features a dual thermal barrier design to significantly reduce heat transfer and keep internal surfaces warmer. | |
|------------------------------|---|---|--|--|
| Typical Vertical Detail | | | | |
| Glass Position | Center | Center | Center | |
| Applications | Storefront Ribbon Windows Punched Openings | Storefront Ribbon Windows Punched Openings | Storefront Ribbon Windows Punched Openings | |
| Glazing Options | Outside Glazed | Outside Glazed | Outside Glazed | |
| Infill Options | 1/4", 1/2", 5/8" 3/4", & 1" | 1" | 1" | |
| Thermal System / Performance | No / CRF _i : 42 U-value: 0.54 btu/hr/ft ² /° | Thermally Broken / CRF _i : 69 U-value: 0.41 btu/hr/ft ² /°F | Thermally Broken / CRF _i : 72 U-value: 0.38 btu/hr/ft ² /°F | |
| Acoustical Rating | STC: 31 (1" ann), 34 (1" lami) OITC: 25 (1" ann), 28 (1" lami) | STC: 31 (1" IGU), 34 (1" lami) OITC: 25 (1" IGU), 29 (1" lami) | STC: 31 (1" IGU), 34 (1" lami) OITC: 25 (1" IGU), 28 (1" lami) | |
| SSG | No | No | No | |
| 2-Color Option | No | No | No | |
| Entrance Integration | Yes | Yes | Yes | |
| SSG Vent Integration | Yes | Yes | Yes | |
| ThermaShade® Integration | Yes | Yes | Yes | |
| Assembly Method | Screw Spline | Screw Spline | Screw Spline | |
| Hurricane Impact Tested | - | - | - | |
| Blast Mitigation | - | - | - | |
| Seismic Drift | Passed @ 2" horizontal displacement (3 cycles) | Passed @ 2" horizontal displacement (3 cycles) | Passed @ 2" horizontal displacement (3 cycles) | |
| Performance Test Standards | ASTM E 283, E 330, E 331 AAMA 501.1, 501.4, 503 AAMA 507, 1503, 1801 NFRC 100 | ASTM E 283, E 330, E 331 AAMA 501.1, 501.4, 503 AAMA 507, 1503, 1801 NFRC 1000 | ASTM E 283, E 330, E 331 AAMA 501.1, 501.4, 503 AAMA 507, 1503, 1801 NFRC 100 | |

See General Notes at end of document.

| Product w/ Description | YHS 50 FS <i>ProTek</i> A 2-1/2" x 5" high performance monolithic storefront system designed and tested to meet the most demanding conditions. | YHS 50 FI <i>ProTek</i> A 2-1/2" x 5" high performance storefront system designed for insulating glass 1" to 1-5/16" thick and tested to meet the most demanding conditions. | YHS 50 TU <i>ProTek</i> A 2-1/2" x 5" high performance storefront system designed for insulating glass 1" to 1-5/16" thick and tested to meet the most demanding conditions. | |
|------------------------------|--|--|--|--|
| Typical Vertical Detail |  |  |  | |
| Glass Position | Center | Center | Center | |
| Applications | Storefront Ribbon Windows Punched Openings | Storefront Ribbon Windows Punched Openings | Storefront Ribbon Windows Punched Openings | |
| Glazing Options | Inside Glazed Outside Glazed | Inside Glazed Outside Glazed | Inside Glazed Outside Glazed | |
| Infill Options | 1/4" to 9/16" | 1" to 1-5/16" | 1" to 1-5/16" | |
| Thermal System / Performance | No | No / U-value: 0.49 btu/hr/ft ² /°F | Thermally Broken / CRF: 59 U-value: 0.45 btu/hr/ft ² /°F | |
| Acoustical Rating | - | STC: 39 (1 ⁵ / ₁₆ " lami) OITC: 34 (1 ⁵ / ₁₆ " lami) | STC: 39 (1 ¹ / ₄ " lami) OITC: 33 (1 ¹ / ₄ " lami) | |
| SSG | No | No | No | |
| 2-Color Option | No | No | No | |
| Entrance Integration | Yes | Yes | Yes | |
| SSG Vent Integration | No | Yes | Yes | |
| ThermaShade® Integration | No | Yes | Yes | |
| Assembly Method | Screw Spline | Screw Spline | Screw Spline | |
| Hurricane Impact Tested | Small Missile Large Missile | Small Missile Large Missile | Small Missile Large Missile | |
| Blast Mitigation | 6 psi / 41psi-ms | 6 psi / 41psi-ms | 6 psi / 41psi-ms | |
| Seismic Drift | - | - | - | |
| Performance Test Standards | ASTM E 283, E 330, E 331 TAS 201, 202, 203 AAMA 101/I.S.2-97 AAMA 503 | ASTM E 283, E 330, E 331 TAS 201, 202, 203 AAMA 503 NFRC 100 | ASTM E 283, E 330, E 331, E 1425 AAMA 1503 NFRC 102 TAS 201, 202, 203 | |

See General Notes at end of document.

GENERAL NOTES

Glass and glazing building codes governing the design and use of products vary widely. YKK AP America Inc. does not control the selection of products, product configurations, operating hardware and function, or glazing materials, and YKK AP assumes no responsibility for these design considerations. It is the responsibility of the design professional, owner, architect, specifier, general contractor, and the installer to make these selections in strict accordance with all applicable codes.

Visit www.ykkap.com for more information on YKK AP's architectural products and for any updates on the Product Selection Guide.