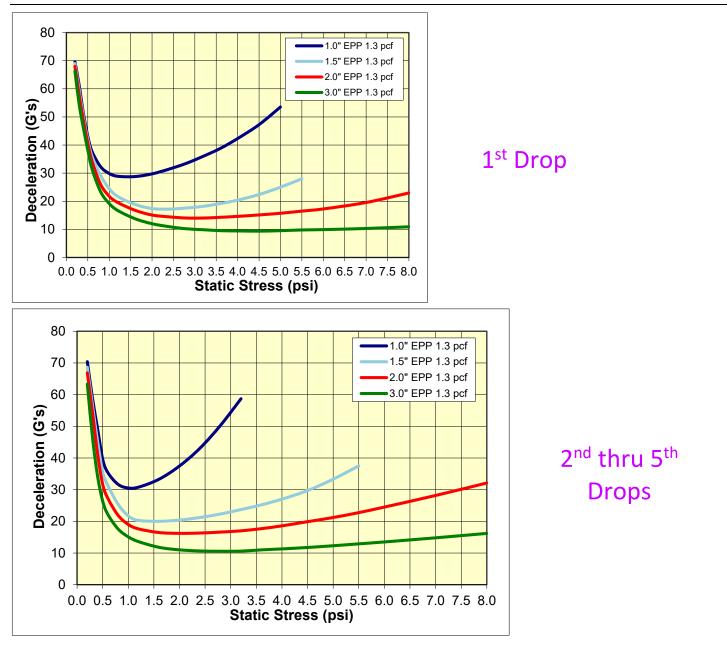




Cushioning Performance Curve for 20 g/l (1.3 pcf) ARPRO[®] Expanded Polypropylene (EPP) Foam 6 inch Drop, 1st & 2nd thru 5th Impact/Drop - 1", 1.5", 2" and 3" Thicknesses



ARPLANK[®] Expanded Polypropylene Foam (EPP) is a highly resilient closed-cell expanded bead foam product. It is ideally suited as an energy absorbing cushioning material for products requiring shock absorption, vibration dampening, buoyancy, insulation, and chemical resistance. It withstands multiple impacts without damage, is very light-weight and is non-abrasive. It is also multi-directional in nature. Unlike traditional extruded foams, which yield different properties along the extrusion, vertical and horizontal axes, the properties of ARPLANK[®] EPP are the same regardless of orientation. ARPLANK[®] EPP contains no volatile blowing agents (0% LEL) and is non-corrosive. These properties make ARPLANK[®] EPP an ideal and versatile product for protective packaging applications.

ARPRO[®] is a registered trademark of JSP Licenses LLC. PUBLICATION JSP-techdoc-cushioncurve-EPP(1.3pcf)-6in-1#82#thru5#-2016/06

The information contained herein is based upon the results of limited laboratory tests on test samples of material molded from expanded polyolefin resin manufactured by JSP. There can be no assurance that the similar results will be achieved in simulated tests or actual use of commercial product molded by customers of JSP. Froduct performance may vary substantially depending upon the particular application or processing involved. The listed properties are llustrative only and not the product specifications. All suggestions and recommendations are made without warrantly since the conditions of user are advised that there may be a need to conduct independent tests and experiments in order for them to determine the extent to which they may choose to rely upon such information in their business operations. JSP Gain and experiments in order for them to determine warrant against infringement by reasons of the use of its products in combination with other material or in any process.

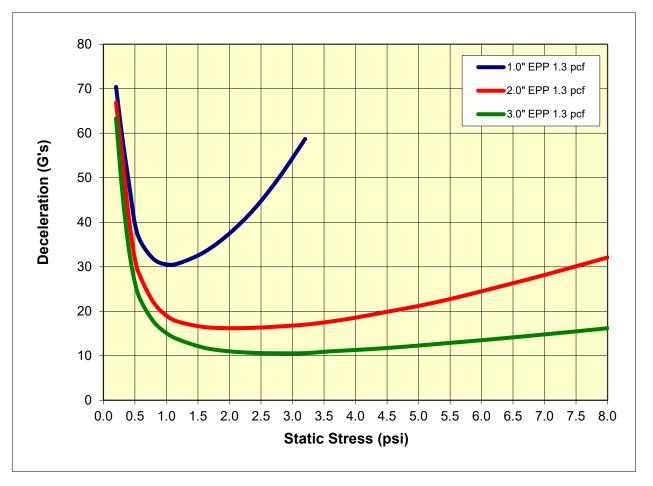


Expanded bead foam packaging materials





Cushioning Performance Curve for 20 g/l (1.3 pcf) ARPRO Expanded Polypropylene (EPP) Foam 12 inch Drop, 2nd thru 5th Impact/Drop - 1", 2", & 3" Thickness'



Note: 20 g/l = 1.3 pcf = 45 X (g/l = grams per liter; pcf = pounds per cubic foot; X = foam expansion ratio)

ARPRO[®] is a registered trademark of JSP Licenses LLC. PUBLICATION JSP-20g/l(1.3pcf)-ARPRO-EPP-cushioncurve-1,2,&3inch-12"drop-2ndthru5thdrop-2014/04

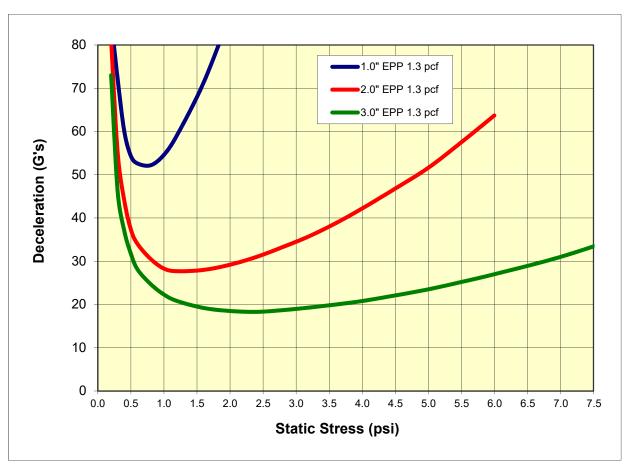
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Cushioning Performance Curve for 20 g/l (1.3 pcf) ARPRO Expanded Polypropylene (EPP) Foam 18 inch Drop, 2nd thru 5th Impact/Drop - 1", 2", & 3" Thickness'



Notes: 20 g/l = 1.3 pcf = 45 X (g/l = grams per liter; pcf = pounds per cubic foot; X = foam expansion ratio) Tested at ambient conditions

ARPRO⁻³ is a registered trademark of JSP Licenses LLC. PUBLICATION JSP-20g/l(1.3pcf)-ARPRO-EPP-cushioncurve-1,2,& 3inch-18"drop-2nd thru 5th drop-2011/01

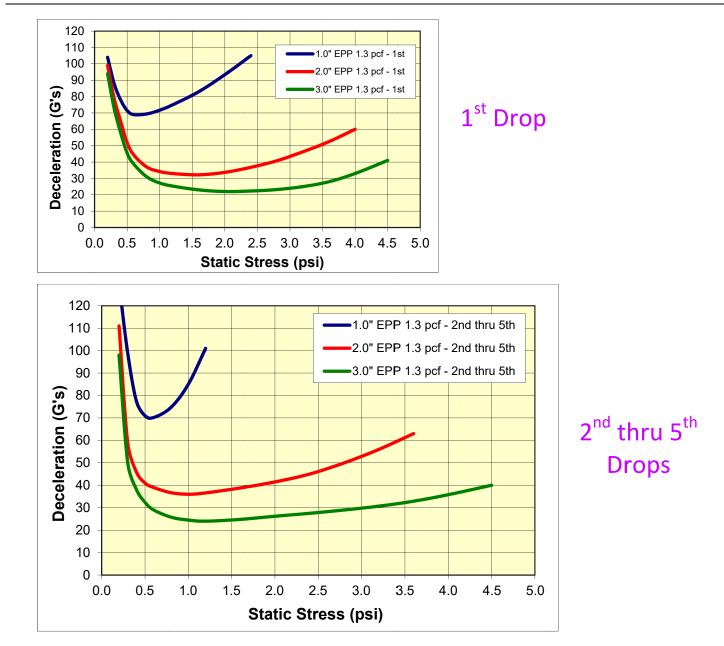
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Cushioning Performance Curve for 20 g/l (1.3 pcf) ARPRO[®] Expanded Polypropylene (EPP) Foam 24 inch Drop, 1st & 2nd thru 5th Impact/Drop - 1", 2" and 3" Thicknesses



ARPLANK[®] Expanded Polypropylene Foam (EPP) is a highly resilient closed-cell expanded bead foam product. It is ideally suited as an energy absorbing cushioning material for products requiring shock absorption, vibration dampening, buoyancy, insulation, and chemical resistance. It withstands multiple impacts without damage, is very light-weight and is non-abrasive. It is also multi-directional in nature. Unlike traditional extruded foams, which yield different properties along the extrusion, vertical and horizontal axes, the properties of ARPLANK[®] EPP are the same regardless of orientation. ARPLANK[®] EPP contains no volatile blowing agents (0% LEL) and is non-corrosive. These properties make ARPLANK[®] EPP an ideal and versatile product for protective packaging applications.

ARPRO[®] is a registered trademark of JSP Licenses LLC. PUBLICATION JSP-techdoc-cushioncurve-EPP(1.3pcf)-24in-1inThk-1st&5th-2016/05

The information contained herein is based upon the results of limited laboratory tests on test samples of material molded from expanded polyolefin resin manufactured by JSP. There can be no assurance that the similar results will be achieved in simulated tests or actual use of commercial product molded by customers of JSP. Product performance may vary substantially depending upon the particular processing involved. The listed properties are illustrative only and not the product specifications. All suggestions and recommendations are made without warranty since the conditions of use are beyond JSP's control. Processing and applications of JSP form products can influence molded part performance in many ways. Consequently, processors and/or users are advised that there may be a need to conduct independent tests and experiments in order for them to determine the extent to which they may choose to rely upon such information in their business operations. JSP disclaims any liability in connection with the use of the information and does not warrant against infringement by reasons of the use of its products in combination with other material or in any process.

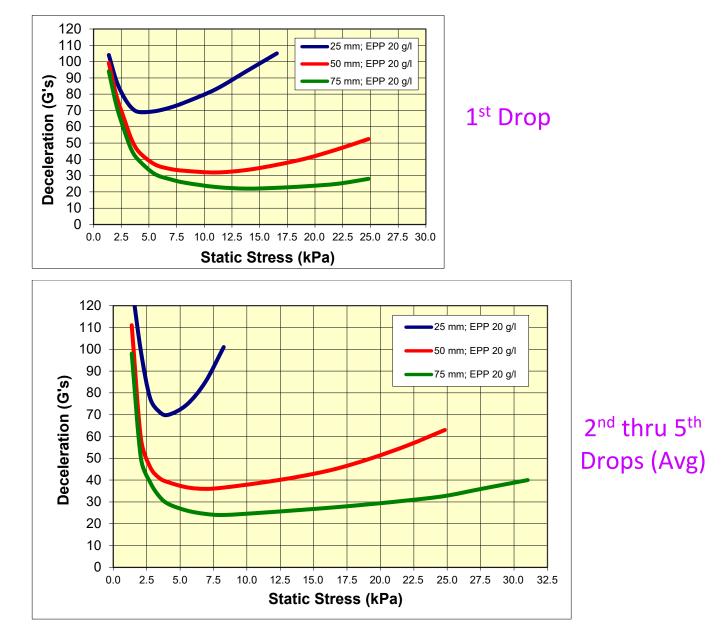


Expanded bead foam packaging materials





Cushioning Performance Curve for 20 g/l (1.3 pcf) ARPRO[®] Expanded Polypropylene (EPP) Foam 60 cm Drop, 1st & 2nd thru 5th Impact/Drop – 25, 50, & 75 mm Thicknesses



ARPLANK[®] Expanded Polypropylene Foam (EPP) is a highly resilient closed-cell expanded bead foam product. It is ideally suited as an energy absorbing cushioning material for products requiring shock absorption, vibration dampening, buoyancy, insulation, and chemical resistance. It withstands multiple impacts without damage, is very light-weight and is non-abrasive. It is also multi-directional in nature. Unlike traditional extruded foams, which yield different properties along the extrusion, vertical and horizontal axes, the properties of ARPLANK[®] EPP are the same regardless of orientation. ARPLANK[®] EPP contains no volatile blowing agents (0% LEL) and is non-corrosive. These properties make ARPLANK[®] EPP an ideal and versatile product for protective packaging applications.

ARPRO[®] is a registered trademark of JSP Licenses LLC. PUBLICATION JSP-techdoc-cushioncurve-EPP20gl(1.3pcf)-60cm(24")-25-50-75mmThk-1^{at}&2ndthru5th-2019/06

The information contained herein is based upon the results of limited laboratory tests on test samples of material molded from expanded polyolefin resin manufactured by JSP. There can be no assurance that the similar results will be achieved in simulated tests or actual use of commercial product molded by customers of JSP. Product performance may vary substantially depending upon the particular application or processing involved. The listed properties are illustrative only and not the product specifications. All suggestions and recommercial products are made without warrantly since the conditions of use are beyond JSP's control. Processing and applications of JSP fram products can influence molded part performance in many ways. Consequently, processors and/or users are advised that there may be a need to conduct independent tests and experiments in order for them to determine the extent to which they may choose to rely upon such information in their business operations. JSP disclaims any liability in connection with the use of the information and does not warrant against infringement by reasons of the use of its products in combination with other material or in any process.

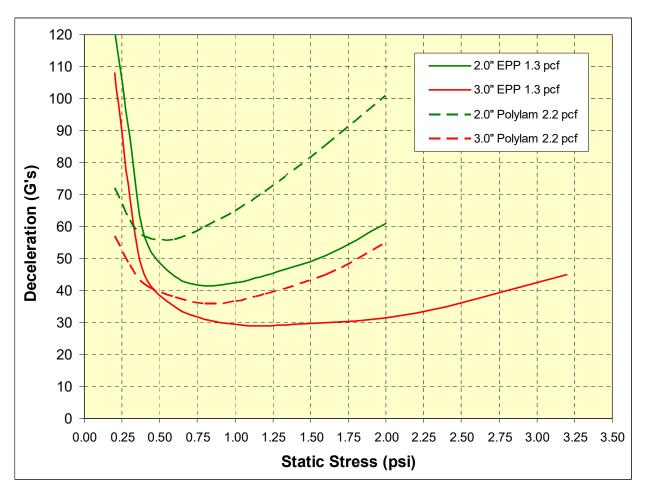


Expanded bead foam packaging materials





1.3 pcf ARPRO[®] Expanded Polypropylene (EPP) vs. 2.2 pcf PolyLam 30 inch Drop, 2nd thru 5th Impact/Drop - 2" and 3" Thickness'



Note: 20g/l = 1.3 pcf = 45X (g/l = grams per liter; pcf = pounds per cubic foot; X = foam expansion ratio)

ARPRO⁻³ is a registered trademark of JSP Licenses LLC. PUBLICATION JSP-1.3pcf)-ARPRO-EPP-cushioncurve-2&3inch-30°drop-2°rd thru 5th drop - PolyLam-2.2pcf-2009/02

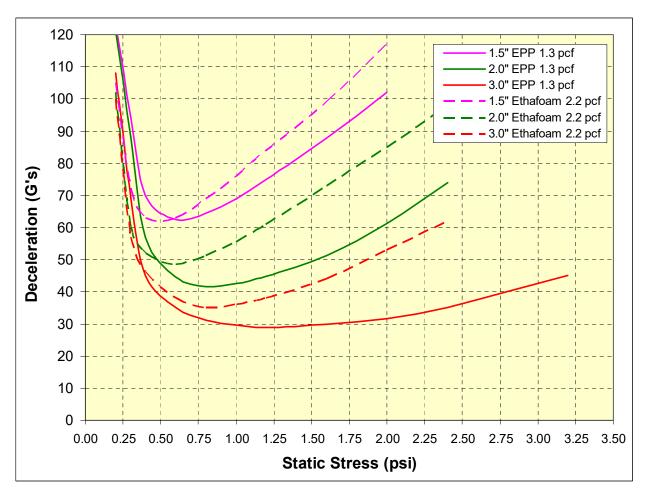
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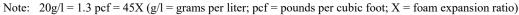






1.3 pcf ARPRO[®] Expanded Polypropylene (EPP) vs. 2.2 pcf Ethafoam 30 inch Drop, 2nd thru 5th Impact/Drop – 1.5", 2", and 3" Thickness'





ARPRO⁻³ is a registered trademark of JSP Licenses LLC. PUBLICATION JSP-1.3pcf-ARPRO-EPP-cushioncurve-1.5&2&3inch-30°drop-2nd thru 5th drop - Ethafoam-2.2pcf-2009/04

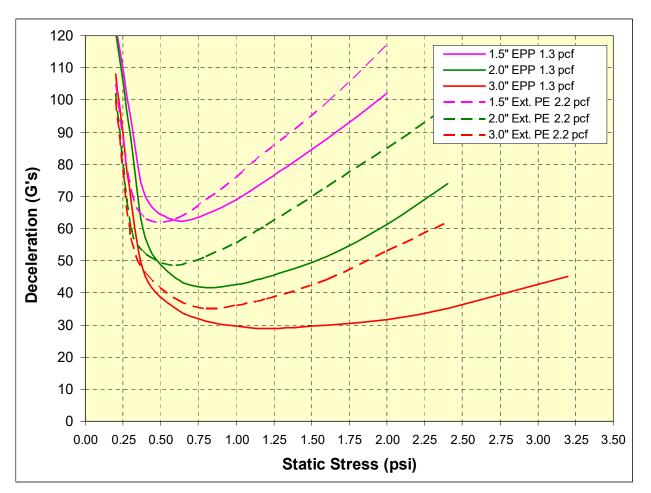
The information contained herein is based upon the results of limited laboratory tests on test samples of material molded from expanded polyolefin resin manufactured by JSP. There can be no assurance that the similar results will be achieved in simulated tests or actual use of commercial product molded by customers of JSP. Fronduct performance may vary substantially depending upon the particular application or processing involved. The listed properties are illustrative only and not the product specifications. All suggestions and recommendiations are made without warrantly since the conditions of use are beyond JSP? sonthol. Processing and applications of JSP from products can influence molded part performance in many ways. Consequently, processors and/or users are advised that there may be a need to conduct independent tests and experiments in order for them to determine the extent to which they may choose to rely upon such information in their business operations. JSP disclaims any liability in connection with the use of the information and does not warrant agains. Infingement by reasons of the use of its products is combination with other made variative on its any process.







1.3 pcf ARPRO[®] Expanded Polypropylene (EPP) vs. 2.2 pcf Extruded PE 30 inch Drop, 2nd thru 5th Impact/Drop – 1.5", 2", and 3" Thickness'



Note: 20g/l = 1.3 pcf = 45X (g/l = grams per liter; pcf = pounds per cubic foot; X = foam expansion ratio)

ARPRO³ is a registered trademark of JSP Licenses LLC. PUBLICATION JSP-1.3pcf-ARPRO-EPP-cushioncurve-1.5&2&3inch-30"drop-2nd thru 5th drop-vs-ExtPE-2.2pcf-2010/01

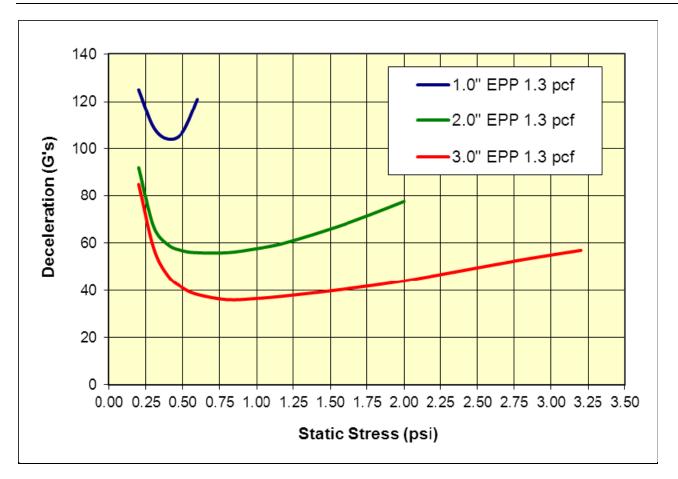
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for 20 g/l (1.3 pcf) ARPRO Expanded Polypropylene (EPP) Foam 36 inch Drop, 2nd thru 5th Impact/Drop - 1", 2", & 3" Thickness'



Note: 20 g/l = 1.3 pcf = 45X (g/l = grams per liter; pcf = pounds per cubic foot; X = foam expansion ratio)

ARPRO⁻⁺ is a registered trademark of JSP Licenses LLC. PUBLICATION JSP-20g/l(1.3pcf)-ARPRO-EPP-cushioncurve-1,2,& 3inch-36"drop-2nd thru 5th drop-2009/05

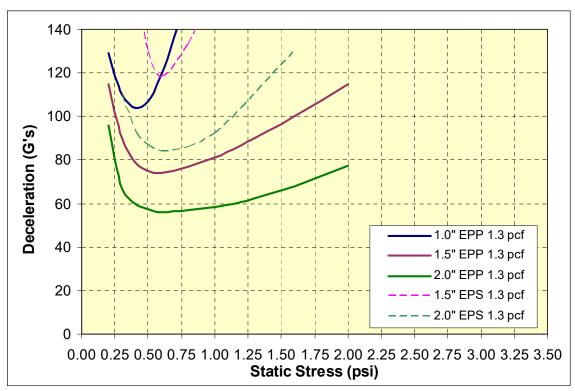
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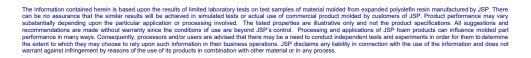


Cushioning Performance Curve Comparison 20 g/l (1.3 pcf) ARPRO[®] EPP Foam vs. 20 g/l (1.3 pcf) EPS Foam 36 inch Drop, 2nd thru 5th Impact/Drop - 1", 1.5" and 2" Thickness'



Note: 20 g/l = 1.25 pcf (g/l = grams per liter; pcf = pounds per cubic foot)

ARPRO[→] is a registered trademark of JSP Licenses LLC. PUBLICATION JSP-cushioncurve-20gl-EPP-vs-20gl-EPS-36in-2ndthru5thDrop-2009/12

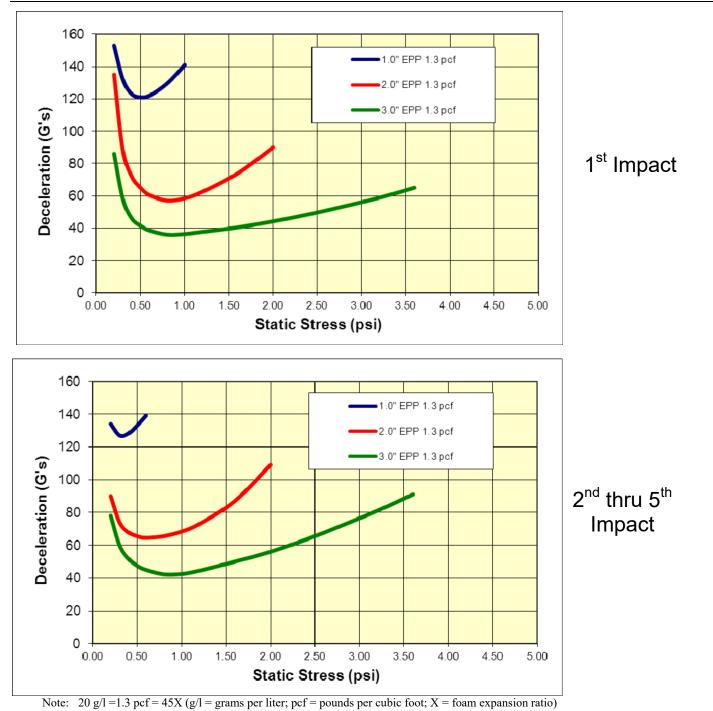








Cushioning Performance Curve 20 g/l (1.3 pcf) ARPRO Expanded Polypropylene (EPP) Foam 42 inch Drop, 1st Impact & 2nd thru 5th Impact; 1", 2", & 3" Thicknesses



ARPRO⁻³ is a registered trademark of JSP Licenses LLC. PUBLICATION JSP-20g/l(1.3pcf)-ARPRO-EPP-cushioncurve-1&2&3inch-42"drop-1st &2xnd-5th drop-2011/08

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