

**MSHA Approval Number: 120G-12.0**  
**120 psi MICON GOB-ISOLATION HYBRID II SEAL**  
**Covered by U.S. Patent No. 5,385,504 and/or**  
**one or more pending U.S. and international patent applications**



**MICON, Inc.**

**For information, contact George Watson at (412) 664-7788, Ext. 15**

**INSTALLATION GUIDELINES**  
**(In up to 20-ft High by up to 28-ft Wide Mine Openings)**

- 1.** The materials used in the installation of the MICON HYBRID II seal are solid, concrete masonry unit (CMU) blocks, HybriCrete blocks, prepackaged bags or prepackaged buckets of #57 stone or pea gravel, and SIGNUM & HybriBond, which are two-component, liquid polymers. Each component of SIGNUM and HybriBond is contained in sealed, 55-gallon drums. The storage restriction for the CMU blocks, HybriCrete blocks, and prepackaged (e.g., bags or buckets) #57 stone or pea gravel is a dry location and protected with a water-tight covering. The storage restriction for the sealed, 55-gallon drums containing the components of SIGNUM and HybriBond – 24 hours before use underground - is a temperature equal to or higher than 40° F, but not more than 105° F.
- 2.** The location(s) for the MICON seal would be chosen by the mine and documented in their MSHA-approved, ventilation/seal plan and would be in compliance with the mine's MSHA-approved, roof control/other plan(s). MICON would not start construction of any MICON seal until the mine has verified to them that the location(s) for the seal and the roof control in those proposed, seal location(s) are in compliance with the appropriate, MSHA regulations. The mine's MSHA-approved, ventilation/sealing plan would specify the piping, fittings, traps, material, and locations for sampling and water-drainage pipes.
- 3.** The front face of the outby wall and the back face of the inby wall of the MICON HYBRID II seal should ideally be 10 feet from any rib line, but not less than 5 feet. If only a shorter distance than 10 feet, but greater than 5 feet is possible, the mine's P.E. would assure the ribs are competent before MICON would start construction of their seal.
- 4.** The location for the MICON seal shall be free of standing water. Any running water will be diverted from the seal location. If water is present, prior to seal construction, the water shall be removed and "B" Bond, or equal, shall be used to dry the area.
- 5.** All metallic material, such as roof screens, conduit lines, mine rails, etc., shall be removed in the location for the MICON seal for at least its total thickness. No metallic material shall be allowed to penetrate through any part of the MICON seal's interior.

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6. Remove all loose material from the roof, ribs, and floor, exposing competent rock/coal/strata at the seal location for at least the total thickness of the seal. Clear exposed surfaces to minimize dusts. Hitching into the competent ribs is not required. All debris in the area 50 feet inby the seal location and 50 feet outby the seal location will be removed.
7. After all loose material is removed from the roof, ribs, and floor, measurements would be taken to determine the maximum height and width of the “cleaned” mine opening through the thickness of the proposed seal. MICON personnel would take and/or verify the maximum, dimensions of the “cleaned” mine opening.
8. Using the seal-thickness charts, MICON personnel would establish the minimum thickness of the MICON seal’s core for the maximum height and width measured (both rounded upward to the nearest 0.25 foot) for the “cleaned” mine opening. If the “cleaned”, mine-opening width exceeds 28 ft., this MICON seal could not be constructed. If the “cleaned”, mine-opening height exceeds 20-ft., this MICON seal could not be constructed. If the “cleaned”, mine-opening height is less than 4 ft., the minimum, core thickness for a 4 ft. height shall be used.
9. If the minimum, total thickness for the MICON HYBRID II seal – as determined in Step 8. – exceeds what had been “cleaned” in Step 6., remove all loose material from “uncleaned” roof, ribs, and floor to assure the MICON HYBRID II seal through its total thickness would abut competent strata.
10. Establish the locations for the inby and outby, SIGNUM-glued, solid, concrete masonry unit (CMU) walls. Assure that the minimum, core thickness as per the seal-thickness chart for the maximum, “cleaned” mine height could be installed.
11. The mine would assure that all materials and equipment to be used in the construction of the MICON HYBRID II seal and the sampling/water pipes to be installed in same would be delivered to the seal location prior to MICON starting construction of the MICON seal.
12. The MICON HYBRID II seal shall only be installed by personnel who either (a) have been trained on the installation of the MICON seal and are working under the direction of a MICON representative or (b) are trained MICON employees.
13. The 120-psi, MICON HYBRID II, mainline seal could have multiple, sampling pipes up to 1-inch in diameter. Any high-density polyethylene or polypropylene pipe having an internal pressure rating of at least 120-psi would be acceptable. Uncoated PVC pipe is not acceptable. PVC pipe, which is at least Schedule 40 and which had been precoated over its exterior surface with a 1/8-inch layer of either SIGNUM or HybriBond, would be

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acceptable. The valves and fittings outside of the mine seal should be made of corrosion-resistant or plastic-coated, metallic material having an internal pressure rating of 120-psi. Non-metallic valves and fittings can be used as long as they have an internal pressure rating of 120-psi. At least one sampling pipe shall be used and shall be no more than 12 inches from the roof on the inby side and extend to the center of 1<sup>st</sup>, inby crosscut supported along its length with preferably non-corrosive or plastic-coated, metallic roof hangers, 6-ft. or less on centers. Standing cribs, either made of hard wood or cementitious material, 6-ft. or less on centers, could also be used to support the sampling pipe from below.

14. The 120-psi, MICON HYBRID II, mainline seal could have no more than either a single, 8-inch diameter or up to four (4), no more than 6-inches in diameter, water pipe(s). Any high-density polyethylene or polypropylene pipe having an internal pressure rating of at least 120-psi would be acceptable. Uncoated PVC pipe is not acceptable. PVC pipe, which is at least Schedule 40 and which had been precoated over its exterior surface with a 1/8-inch layer of either SIGNUM or HybriBond, would be acceptable. The valves and fittings outside of the mine seal should be made of corrosion-resistant or plastic-coated, metallic material having an internal pressure rating of 120-psi. Non-metallic valves and fittings can be used as long as they have an internal pressure rating of 120-psi. The location requirement is that any two water pipes and/or their U-traps shall be spaced at least 3-ft. on centers away from any other water pipe/U-trap and at least 3-ft. on center away from either rib. The U-trap(s) may or may not be recessed into the mine floor. Because no one location for a water pipe and its U-trap would be best for all seal installations, mine operators in submitting their seal plan to the MSHA District office shall include the location(s) of those water pipe(s) to best handle potential water build-up behind the seal; which location(s) shall meet the aforementioned number and spacing requirements (e.g., no more than 8-inches in diameter and at least 3-ft. on center from one another and/or the ribs). The maximum height of water behind the seal should be no more than 2-ft, therefore, the inby invert of the water pipe should not exceed 24 inches from the mine floor.
15. Prior to the installation of each MICON HYBRID II seal, and/or whenever a change-out in the two-component, pumping system is made, MICON personnel would prepare at least three, "beam" samples made by gluing with SIGNUM, the abutting faces of three (3), 3-1/2" x 3-1/2" x 3-1/2" cubes of CMU block to form 3-1/2" x 3-1/2" x 10-1/2" test specimens. Then, the six, exterior sides of each "beam" specimen would be coated with a nominal 1/4" of HybriBond. The "beam" test specimens would be cured at their respective seal site for at least 1-hour before being sent for testing.
16. The collected, quality control samples would be delivered to MICON, a testing laboratory, or a laboratory technician on site by either the mining company or MICON personnel.

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17. A technician, who had been trained and certified for the direct shear test, would conduct the tests on the “beam” specimens. These quality control tests could be conducted on site or back in the laboratory.

18. Three (3), consecutive “beam” samples shall exhibit a minimum, shear strength listed below for various mining heights, in a direct shear test of the SIGNUM/CMU block interface.

<4 to 5 ft:	204 psi
>5 to 6 ft:	197 psi
>6 to 7 ft:	192 psi
>7 to 8 ft:	186 psi
>8 to 9 ft:	181 psi
>9 to 10 ft:	176 psi
>10 to 11 ft:	171 psi
>11 to 12 ft:	167 psi
>12 to 13 ft:	163 psi
>13 to 14 ft:	159 psi
>14 to 15 ft:	155 psi
>15 to 16 ft:	152 psi
>16 to 17 ft:	150 psi
>17 to 18 ft:	148 psi
>18 to 19 ft:	147 psi
>19 to 20 ft:	146 psi

19. A certified copy of the test results for each seal would be given to the mining company for transmittal to the MSHA District Office.

20. Each MICON HYBRID II seal would not be considered to have reached its design strength until a certified copy of tests results are received by the MSHA District Office.

21. If a floor “mat” of one course (a minimum, nominal 8 inches) of solid, CMU block, which would be glued to one another’s abutting, end faces and to the mine floor with SIGNUM, is specified in a given seal installation, remove all loose material from the “uncleaned” mine floor where the floor “mat” is to be installed as per Steps 6. and 8. above before laying the inby, CMU “mat”. The gap between any two wythes of the floor “mat” of SIGNUM-glued, CMU block should be a nominal  $< \frac{1}{4}$ ” to 2” and filled with either SIGNUM or HybriBond. After the inby floor “mat” is completed to the size specified, fully fill the gaps between the end CMU blocks and both ribs with SIGNUM and/or HybriBond

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- with or without #57 stone or pea gravel - and/or SIGNUM-glued, shaped pieces of CMU - to firmly tighten the CMU blocks in place and adhere them to the ribs.

22. If a rib “mat” of one wythe (a minimum, nominal 16 inches thick) of solid, CMU block, which would be glued to one another’s abutting, faces and to both ribs and the mine floor with SIGNUM, is specified in a given seal installation, remove all loose material from the “uncleaned” ribs where each rib “mat” is to be installed as per Steps 6. and 8. above before laying the inby, CMU rib “mats”. The gap between any CMU in a given course of the rib “mat” of SIGNUM-glued, CMU block should be a nominal  $<1/4$ ” to 2” and filled with either Signum or HybriBond. After every or every other course in the two, inby, rib “mats” are completed to the size specified, fully fill the gaps between the CMU blocks and both ribs with SIGNUM and/or HybriBond - with or without #57 stone or pea gravel - and/or SIGNUM-glued, shaped pieces of CMU - to firmly tighten the CMU blocks in place and adhere them to the ribs. The inby, rib “mats” could be installed simultaneously with the seal itself.
  
23. Using any size, solid CMU blocks, construct the inby, CMU wall for the MICON Hybrid II seal using SIGNUM to fully glue-grout the abutting faces of the CMU together such that the inby-wall (wythe) thickness is a nominal 8”. Fully glue-grout the base course of the solid-concrete blocks to the mine floor with SIGNUM. Voids and/or depressions in the mine floor can be filled/leveled with SIGNUM - with or without #57 stone or pea gravel. If an inby CMU floor “mat” and/or rib “mat” has/have been installed, the gap between the inby edge(s) of the CMU floor and/or rib “mat(s)” and the inby face of the first and subsequent rows (courses) of the inby CMU wythe should be a nominal  $<1/4$ ” to 2” and filled with either SIGNUM or HybriBond at this time. After each row or every other row of CMU in the inby, CMU wythe is installed, fully fill the gaps between the end blocks and ribs with SIGNUM and/or HybriBond - with or without #57 stone or pea gravel - and/or Signum-glued, shaped pieces of CMU - to firmly tighten the CMU blocks in place. Fully fill the gaps between the last course and mine roof with SIGNUM - with or without #57 stone or pea gravel - and/or untreated, wood wedges or HybriCrete wedges. The construction of the first wythe of CMU could be constructed simultaneously with the other wythes of CMU.
  
24. Construct the subsequent wythes (as many as are needed to achieve the minimum, seal thickness specified in the seal thickness chart) of CMU as the inby, CMU wythe had been constructed in Step 23. above. The gap between all adjacent, CMU wythes should be a nominal  $<1/4$ ” to 2” and filled with either SIGNUM or HybriBond. The gap between the outby wythe of CMU and its adjacent, inby wythe of CMU should be a nominal  $<1/4$ ” to 4” and filled with either SIGNUM or HybriBond. After each row or every other row of CMU in the subsequent CMU wythes are installed, fully fill the gaps between the end blocks and ribs with SIGNUM and/or HybriBond - with or without #57 stone or pea gravel

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- and/or Signum-glued, shaped pieces of CMU - to firmly tighten the CMU blocks in place. Fully fill the gaps between the last course and mine roof with SIGNUM - with or without #57 stone or pea gravel - and/or untreated, wood wedges or HybriCrete wedges. The construction of any wythe of CMU could be constructed simultaneously with the other wythes of CMU. When the last course/row of each wythe of CMU is completed, fully fill the gaps/voids at the mine roof with shaped pieces of HybriCrete block, which are fully glue-grouted to one another and to the mine roof using SIGNUM. Another alternative for fully filling the gaps/voids at the mine roof would be to install HybriBond - with or without #57 stone or pea gravel - as long as the mean distance between the top course/row of CMU block and the mine roof is 4-inches or less.

25. Install water trap pipe(s) and sampling tube(s) as specified by the mine when reaching the appropriate heights of seal construction to accommodate same as directed by mine personnel. Mine personnel would be responsible for assuring that the sampling/water pipes through the seal are installed at the locations and of the nonmetallic material specified in the mine's MSHA-approved, ventilation/sealing plan and in Steps 13 and 14 above. CMU blocks can be cut or shaped to receive the sampling/water drainages pipes. MICON personnel would grout the pipes/tubes to the surrounding CMU with SIGNUM or HybriBond, assuring that all voids are filled between the pipes/tubes and the CMU throughout the seal's thickness.
26. If either a floor "mat" and/or rib "mats" are specified, construct the outby "mats" as per Steps 6., 8., 21., and 22. above after the seal itself has been completed to the thickness specified in the thickness chart. Assure that the gap between the inby sides of the floor and/or rib "mats" and the outby surface of the seal is a nominal  $<1/4$ " to 2" and fill these gaps with either SIGNUM or HybriBond.

**ADDITIONAL QUALITY CONTROL DETAILS:**

No quality control/assurance samples of the CMU, HybriCrete block, or SIGNUM/HybriBond are required to be taken underground and subsequently tested other than what had been mentioned in Step 15. above for the "beam" specimens of CMU/SIGNUM/HybriBond. All quality control on these other building materials are conducted by MICON, a testing laboratory, and/or their manufacturer prior to the materials being sent to the mine. Usually the mine would purchase the CMU used in the seal's construction. MICON requires the mine to supply them with the manufacturer's "mill sheet", which documents that the quality control samples from the manufactured lot of the CMU have been tested as per ASTM C-140-97 showing that the CMU's compressive strength is at least 1,800-psi. A Technical Support-sanctioned laboratory conducts quality control tests on samples from the manufactured lots of HybriCrete block as per ASTM D-1621-04a; compressive samples are taken and run on at least one block per hundred manufactured. Only those lots of HybriCrete block, which pass

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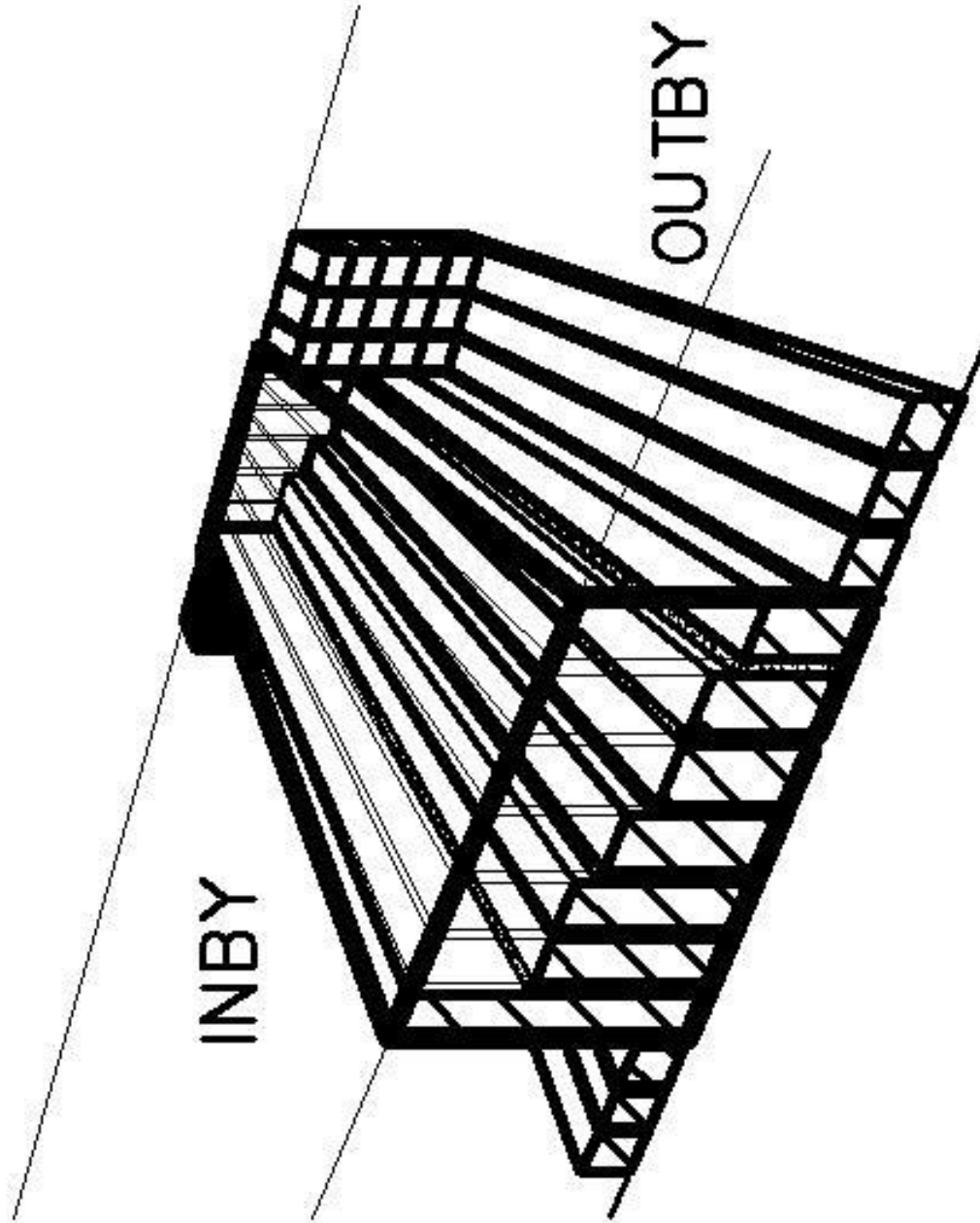
ASTM D-1621-04a, are shipped by MICON to the mine. As also mentioned above, the sealed, 55-gallon drums containing the two components of SIGNUM and HybriBond are quality-controlled by their manufacturer (e.g., Dow Chemical) and marked with the appropriate, quality control lot number prior to shipment to MICON. MICON's application/mixing equipment, which is used only by MICON's trained personnel underground to apply SIGNUM and HybriBond, are quality-controlled tested by MICON prior to each seal installation(s) at a given mine. Furthermore, trained personnel under the supervision and direction of a MICON technician are the only ones to use this equipment to construct the MICON HYBRID II seal, and all are trained by the MICON technician to recognize when that equipment is "off ratio". Should that equipment be suspected of being "off-ratio", a back-up application system would be employed by MICON's technicians. Prior to the use of the back-up system, at least three, quality-control "beam" specimens would be constructed and stored underground at least 1-hour before being removed for testing. The quality-control testing of the "beam" samples by a trained and lab-certified technician is a check on not only the shear strength of the SIGNUM/CMU block interface, but also the effectiveness of the two-component mixer operating properly.

**CONVERGENCE MEASUREMENTS:**

A convergence measurement should be taken and recorded during the regular examination of the seal by mine personnel. A permanently placed "pogo" stick or extensometer could be placed at the outby face of the seal, preferably near the center of the mine opening, and extend from the bottom of the first course of CMU at the mine floor to the top of the topmost, CMU course at the mine roof. If this measurement exceeds the maximum allowable convergence specified, check to see that the top and bottom of the "pogo" stick or extensometer extend from the bottom of the first course of CMU to the top of the topmost, CMU course at the mine roof. Readjust the top and bottom of the "pogo" stick or extensometer, if required, and retake the measurement. If this measurement exceeds the maximum allowable convergence specified and/or the outby, CMU wall shows signs of cracking, MICON should be contacted immediately. If MICON determines that the convergence has compromised the seal's strength, a P.E. must be contacted immediately to evaluate the effects of this convergence and certify the structural integrity of the seal and provide that certification to the MSHA District Office. Cracks in the outby, SIGNUM-glued, CMU could be repaired by filling the cracks with SIGNUM by a MICON technician.

*Notes: In areas where roof convergence and/or floor heave is possible, one row of concrete block at the mine roof can be substituted with Phenolic Board, 30 CFR 75.335 (2). The Phenolic Board must be the same width of the concrete block, which it is replacing, and be glued to the CMU and mine roof & ribs with SIGNUM.*

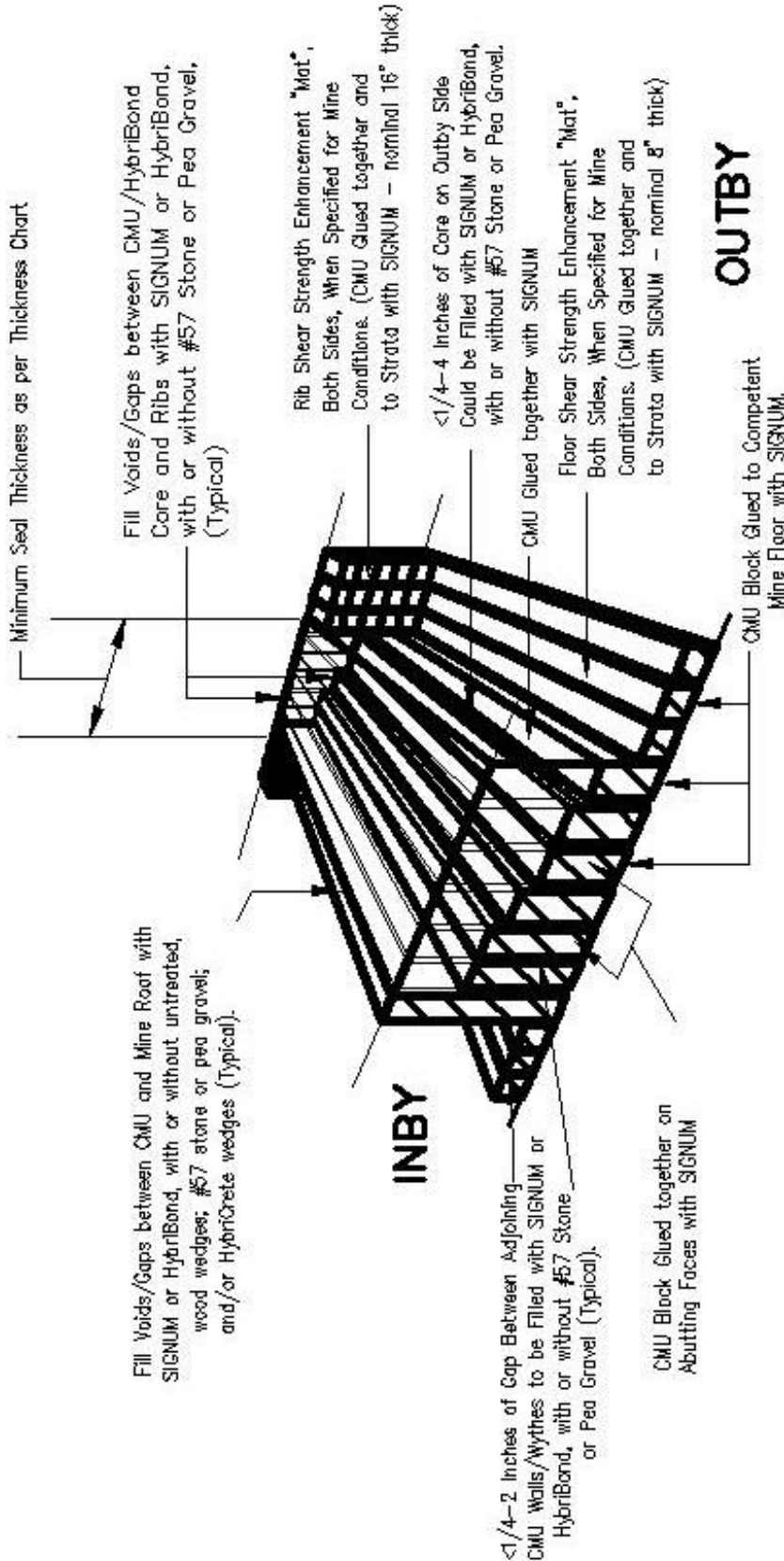
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**TYPICAL, ISOMETRIC VIEW OF MICON HYBRID II SEAL  
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**120-psi, MICON Hybrid II, Gob-Isolation Seal**

Pressure (psi)	D.L.F. (#)	Hgt. (ft)	Width (ft)	W/H (ratio)	Minimum Thickness (in)	Maximum Convergence (in)
120	1	4	18	4.50	18.6	1.44
120	1	4	19	4.75	18.6	1.44
120	1	4	20	5.00	18.6	1.44
120	1	4	21	5.25	18.6	1.44
120	1	4	22	5.50	18.6	1.44
120	1	4	23	5.75	18.6	1.44
120	1	4	24	6.00	18.6	1.44
120	1	4	25	6.25	18.6	1.44
120	1	4	26	6.50	18.6	1.44
120	1	4	27	6.75	18.6	1.44
120	1	4	28	7.00	18.6	1.44
120	1	4.25	18	4.24	19.7	1.53
120	1	4.25	19	4.47	19.7	1.53
120	1	4.25	20	4.71	19.7	1.53
120	1	4.25	21	4.94	19.7	1.53
120	1	4.25	22	5.18	19.7	1.53
120	1	4.25	23	5.41	19.7	1.53
120	1	4.25	24	5.65	19.7	1.53
120	1	4.25	25	5.88	19.7	1.53
120	1	4.25	26	6.12	19.7	1.53
120	1	4.25	27	6.35	19.7	1.53
120	1	4.25	28	6.59	19.7	1.53
120	1	4.5	18	4.00	20.9	1.62
120	1	4.5	19	4.22	20.9	1.62
120	1	4.5	20	4.44	20.9	1.62
120	1	4.5	21	4.67	20.9	1.62
120	1	4.5	22	4.89	20.9	1.62
120	1	4.5	23	5.11	20.9	1.62
120	1	4.5	24	5.33	20.9	1.62
120	1	4.5	25	5.56	20.9	1.62
120	1	4.5	26	5.78	20.9	1.62

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120	1	4.5	27	6.00	20.9	1.62
120	1	4.5	28	6.22	20.9	1.62
120	1	4.75	18	3.79	22.1	1.71
120	1	4.75	19	4.00	22.1	1.71
120	1	4.75	20	4.21	22.1	1.71
120	1	4.75	21	4.42	22.1	1.71
120	1	4.75	22	4.63	22.1	1.71
120	1	4.75	23	4.84	22.1	1.71
120	1	4.75	24	5.05	22.1	1.71
120	1	4.75	25	5.26	22.1	1.71
120	1	4.75	26	5.47	22.1	1.71
120	1	4.75	27	5.68	22.1	1.71
120	1	4.75	28	5.89	22.1	1.71
120	1	5	18	3.60	23.2	1.80
120	1	5	19	3.80	23.2	1.80
120	1	5	20	4.00	23.2	1.80
120	1	5	21	4.20	23.2	1.80
120	1	5	22	4.40	23.2	1.80
120	1	5	23	4.60	23.2	1.80
120	1	5	24	4.80	23.2	1.80
120	1	5	25	5.00	23.2	1.80
120	1	5	26	5.20	23.2	1.80
120	1	5	27	5.40	23.2	1.80
120	1	5	28	5.60	23.2	1.80
120	1	5.25	18	3.43	24.4	1.89
120	1	5.25	19	3.62	24.4	1.89
120	1	5.25	20	3.81	24.4	1.89
120	1	5.25	21	4.00	24.4	1.89
120	1	5.25	22	4.19	24.4	1.89
120	1	5.25	23	4.38	24.4	1.89
120	1	5.25	24	4.57	24.4	1.89
120	1	5.25	25	4.76	24.4	1.89
120	1	5.25	26	4.95	24.4	1.89
120	1	5.25	27	5.14	24.4	1.89
120	1	5.25	28	5.33	24.4	1.89
120	1	5.5	18	3.27	25.5	1.98
120	1	5.5	19	3.45	25.5	1.98

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120	1	5.5	20	3.64	25.5	1.98
120	1	5.5	21	3.82	25.5	1.98
120	1	5.5	22	4.00	25.5	1.98
120	1	5.5	23	4.18	25.5	1.98
120	1	5.5	24	4.36	25.5	1.98
120	1	5.5	25	4.55	25.5	1.98
120	1	5.5	26	4.73	25.5	1.98
120	1	5.5	27	4.91	25.5	1.98
120	1	5.5	28	5.09	25.5	1.98
120	1	5.75	18	3.13	26.7	2.07
120	1	5.75	19	3.30	26.7	2.07
120	1	5.75	20	3.48	26.7	2.07
120	1	5.75	21	3.65	26.7	2.07
120	1	5.75	22	3.83	26.7	2.07
120	1	5.75	23	4.00	26.7	2.07
120	1	5.75	24	4.17	26.7	2.07
120	1	5.75	25	4.35	26.7	2.07
120	1	5.75	26	4.52	26.7	2.07
120	1	5.75	27	4.70	26.7	2.07
120	1	5.75	28	4.87	26.7	2.07
120	1	6	18	3.00	27.9	2.16
120	1	6	19	3.17	27.9	2.16
120	1	6	20	3.33	27.9	2.16
120	1	6	21	3.50	27.9	2.16
120	1	6	22	3.67	27.9	2.16
120	1	6	23	3.83	27.9	2.16
120	1	6	24	4.00	27.9	2.16
120	1	6	25	4.17	27.9	2.16
120	1	6	26	4.33	27.9	2.16
120	1	6	27	4.50	27.9	2.16
120	1	6	28	4.67	27.9	2.16
120	1	6.25	18	2.88	29.0	2.25
120	1	6.25	19	3.04	29.0	2.25
120	1	6.25	20	3.20	29.0	2.25
120	1	6.25	21	3.36	29.0	2.25
120	1	6.25	22	3.52	29.0	2.25
120	1	6.25	23	3.68	29.0	2.25

**MSHA Approval Number: 120G-12.0**  
**120 psi MICON GOB-ISOLATION HYBRID II SEAL**  
**Covered by U.S. Patent No. 5,385,504 and/or**  
**one or more pending U.S. and international patent applications**

120	1	6.25	24	3.84	29.0	2.25
120	1	6.25	25	4.00	29.0	2.25
120	1	6.25	26	4.16	29.0	2.25
120	1	6.25	27	4.32	29.0	2.25
120	1	6.25	28	4.48	29.0	2.25
120	1	6.5	18	2.77	30.2	2.34
120	1	6.5	19	2.92	30.2	2.34
120	1	6.5	20	3.08	30.2	2.34
120	1	6.5	21	3.23	30.2	2.34
120	1	6.5	22	3.38	30.2	2.34
120	1	6.5	23	3.54	30.2	2.34
120	1	6.5	24	3.69	30.2	2.34
120	1	6.5	25	3.85	30.2	2.34
120	1	6.5	26	4.00	30.2	2.34
120	1	6.5	27	4.15	30.2	2.34
120	1	6.5	28	4.31	30.2	2.34
120	1	6.75	18	2.67	31.3	2.43
120	1	6.75	19	2.81	31.3	2.43
120	1	6.75	20	2.96	31.3	2.43
120	1	6.75	21	3.11	31.3	2.43
120	1	6.75	22	3.26	31.3	2.43
120	1	6.75	23	3.41	31.3	2.43
120	1	6.75	24	3.56	31.3	2.43
120	1	6.75	25	3.70	31.3	2.43
120	1	6.75	26	3.85	31.3	2.43
120	1	6.75	27	4.00	31.3	2.43
120	1	6.75	28	4.15	31.3	2.43
120	1	7	18	2.57	32.5	2.52
120	1	7	19	2.71	32.5	2.52
120	1	7	20	2.86	32.5	2.52
120	1	7	21	3.00	32.5	2.52
120	1	7	22	3.14	32.5	2.52
120	1	7	23	3.29	32.5	2.52
120	1	7	24	3.43	32.5	2.52
120	1	7	25	3.57	32.5	2.52
120	1	7	26	3.71	32.5	2.52
120	1	7	27	3.86	32.5	2.52

**MSHA Approval Number: 120G-12.0**  
**120 psi MICON GOB-ISOLATION HYBRID II SEAL**  
**Covered by U.S. Patent No. 5,385,504 and/or**  
**one or more pending U.S. and international patent applications**

120	1	7	28	4.00	32.5	2.52
120	1	7.25	18	2.48	33.7	2.61
120	1	7.25	19	2.62	33.7	2.61
120	1	7.25	20	2.76	33.7	2.61
120	1	7.25	21	2.90	33.7	2.61
120	1	7.25	22	3.03	33.7	2.61
120	1	7.25	23	3.17	33.7	2.61
120	1	7.25	24	3.31	33.7	2.61
120	1	7.25	25	3.45	33.7	2.61
120	1	7.25	26	3.59	33.7	2.61
120	1	7.25	27	3.72	33.7	2.61
120	1	7.25	28	3.86	33.7	2.61
120	1	7.5	18	2.40	34.8	2.70
120	1	7.5	19	2.53	34.8	2.70
120	1	7.5	20	2.67	34.8	2.70
120	1	7.5	21	2.80	34.8	2.70
120	1	7.5	22	2.93	34.8	2.70
120	1	7.5	23	3.07	34.8	2.70
120	1	7.5	24	3.20	34.8	2.70
120	1	7.5	25	3.33	34.8	2.70
120	1	7.5	26	3.47	34.8	2.70
120	1	7.5	27	3.60	34.8	2.70
120	1	7.5	28	3.73	34.8	2.70
120	1	7.75	18	2.32	36.0	2.79
120	1	7.75	19	2.45	36.0	2.79
120	1	7.75	20	2.58	36.0	2.79
120	1	7.75	21	2.71	36.0	2.79
120	1	7.75	22	2.84	36.0	2.79
120	1	7.75	23	2.97	36.0	2.79
120	1	7.75	24	3.10	36.0	2.79
120	1	7.75	25	3.23	36.0	2.79
120	1	7.75	26	3.35	36.0	2.79
120	1	7.75	27	3.48	36.0	2.79
120	1	7.75	28	3.61	36.0	2.79
120	1	8	18	2.25	37.1	2.88
120	1	8	19	2.38	37.1	2.88
120	1	8	20	2.50	37.1	2.88

**MSHA Approval Number: 120G-12.0**  
**120 psi MICON GOB-ISOLATION HYBRID II SEAL**  
**Covered by U.S. Patent No. 5,385,504 and/or**  
**one or more pending U.S. and international patent applications**

120	1	8	21	2.63	37.1	2.88
120	1	8	22	2.75	37.1	2.88
120	1	8	23	2.88	37.1	2.88
120	1	8	24	3.00	37.1	2.88
120	1	8	25	3.13	37.1	2.88
120	1	8	26	3.25	37.1	2.88
120	1	8	27	3.38	37.1	2.88
120	1	8	28	3.50	37.1	2.88
120	1	8.25	18	2.18	38.3	2.97
120	1	8.25	19	2.30	38.3	2.97
120	1	8.25	20	2.42	38.3	2.97
120	1	8.25	21	2.55	38.3	2.97
120	1	8.25	22	2.67	38.3	2.97
120	1	8.25	23	2.79	38.3	2.97
120	1	8.25	24	2.91	38.3	2.97
120	1	8.25	25	3.03	38.3	2.97
120	1	8.25	26	3.15	38.3	2.97
120	1	8.25	27	3.27	38.3	2.97
120	1	8.25	28	3.39	38.3	2.97
120	1	8.5	18	2.12	39.5	3.06
120	1	8.5	19	2.24	39.5	3.06
120	1	8.5	20	2.35	39.5	3.06
120	1	8.5	21	2.47	39.5	3.06
120	1	8.5	22	2.59	39.5	3.06
120	1	8.5	23	2.71	39.5	3.06
120	1	8.5	24	2.82	39.5	3.06
120	1	8.5	25	2.94	39.5	3.06
120	1	8.5	26	3.06	39.5	3.06
120	1	8.5	27	3.18	39.5	3.06
120	1	8.5	28	3.29	39.5	3.06
120	1	8.75	18	2.06	40.6	3.15
120	1	8.75	19	2.17	40.6	3.15
120	1	8.75	20	2.29	40.6	3.15
120	1	8.75	21	2.40	40.6	3.15
120	1	8.75	22	2.51	40.6	3.15
120	1	8.75	23	2.63	40.6	3.15
120	1	8.75	24	2.74	40.6	3.15

**MSHA Approval Number: 120G-12.0**  
**120 psi MICON GOB-ISOLATION HYBRID II SEAL**  
**Covered by U.S. Patent No. 5,385,504 and/or**  
**one or more pending U.S. and international patent applications**

120	1	8.75	25	2.86	40.6	3.15
120	1	8.75	26	2.97	40.6	3.15
120	1	8.75	27	3.09	40.6	3.15
120	1	8.75	28	3.20	40.6	3.15
120	1	9	19	2.11	41.8	3.24
120	1	9	20	2.22	41.8	3.24
120	1	9	21	2.33	41.8	3.24
120	1	9	22	2.44	41.8	3.24
120	1	9	23	2.56	41.8	3.24
120	1	9	24	2.67	41.8	3.24
120	1	9	25	2.78	41.8	3.24
120	1	9	26	2.89	41.8	3.24
120	1	9	27	3.00	41.8	3.24
120	1	9	28	3.11	41.8	3.24
120	1	9.25	18	1.95	42.9	3.33
120	1	9.25	19	2.05	42.9	3.33
120	1	9.25	20	2.16	42.9	3.33
120	1	9.25	21	2.27	42.9	3.33
120	1	9.25	22	2.38	42.9	3.33
120	1	9.25	23	2.49	42.9	3.33
120	1	9.25	24	2.59	42.9	3.33
120	1	9.25	25	2.70	42.9	3.33
120	1	9.25	26	2.81	42.9	3.33
120	1	9.25	27	2.92	42.9	3.33
120	1	9.25	28	3.03	42.9	3.33
120	1	9.5	18	1.89	44.0	3.42
120	1	9.5	19	2.00	44.0	3.42
120	1	9.5	20	2.11	44.1	3.42
120	1	9.5	21	2.21	44.1	3.42
120	1	9.5	22	2.32	44.1	3.42
120	1	9.5	23	2.42	44.1	3.42
120	1	9.5	24	2.53	44.1	3.42
120	1	9.5	25	2.63	44.1	3.42
120	1	9.5	26	2.74	44.1	3.42
120	1	9.5	27	2.84	44.1	3.42
120	1	9.5	28	2.95	44.1	3.42
120	1	9.75	18	1.85	45.1	3.51



**MSHA Approval Number: 120G-12.0**  
**120 psi MICON GOB-ISOLATION HYBRID II SEAL**  
**Covered by U.S. Patent No. 5,385,504 and/or**  
**one or more pending U.S. and international patent applications**

120	1	9.75	19	1.95	45.2	3.51
120	1	9.75	20	2.05	45.3	3.51
120	1	9.75	21	2.15	45.3	3.51
120	1	9.75	22	2.26	45.3	3.51
120	1	9.75	23	2.36	45.3	3.51
120	1	9.75	24	2.46	45.3	3.51
120	1	9.75	25	2.56	45.3	3.51
120	1	9.75	26	2.67	45.3	3.51
120	1	9.75	27	2.77	45.3	3.51
120	1	9.75	28	2.87	45.3	3.51
120	1	10	18	1.80	46.1	3.60
120	1	10	19	1.90	46.3	3.60
120	1	10	20	2.00	46.3	3.60
120	1	10	21	2.10	46.4	3.60
120	1	10	22	2.20	46.4	3.60
120	1	10	23	2.30	46.4	3.60
120	1	10	24	2.40	46.4	3.60
120	1	10	25	2.50	46.4	3.60
120	1	10	26	2.60	46.4	3.60
120	1	10	27	2.70	46.4	3.60
120	1	10	28	2.80	46.4	3.60
120	1	10.25	18	1.76	47.1	3.69
120	1	10.25	19	1.85	47.4	3.69
120	1	10.25	20	1.95	47.5	3.69
120	1	10.25	21	2.05	47.6	3.69
120	1	10.25	22	2.15	47.6	3.69
120	1	10.25	23	2.24	47.6	3.69
120	1	10.25	24	2.34	47.6	3.69
120	1	10.25	25	2.44	47.6	3.69
120	1	10.25	26	2.54	47.6	3.69
120	1	10.25	27	2.63	47.6	3.69
120	1	10.25	28	2.73	47.6	3.69
120	1	10.5	18	1.71	48.1	3.78
120	1	10.5	19	1.81	48.5	3.78
120	1	10.5	20	1.90	48.6	3.78
120	1	10.5	21	2.00	48.7	3.78
120	1	10.5	22	2.10	48.7	3.78

**MSHA Approval Number: 120G-12.0**  
**120 psi MICON GOB-ISOLATION HYBRID II SEAL**  
**Covered by U.S. Patent No. 5,385,504 and/or**  
**one or more pending U.S. and international patent applications**

120	1	10.5	23	2.19	48.7	3.78
120	1	10.5	24	2.29	48.7	3.78
120	1	10.5	25	2.38	48.7	3.78
120	1	10.5	26	2.48	48.7	3.78
120	1	10.5	27	2.57	48.7	3.78
120	1	10.5	28	2.67	48.7	3.78
120	1	10.75	18	1.67	49.0	3.87
120	1	10.75	19	1.77	49.5	3.87
120	1	10.75	20	1.86	49.7	3.87
120	1	10.75	21	1.95	49.8	3.87
120	1	10.75	22	2.05	49.9	3.87
120	1	10.75	23	2.14	49.9	3.87
120	1	10.75	24	2.23	49.9	3.87
120	1	10.75	25	2.33	49.9	3.87
120	1	10.75	26	2.42	49.9	3.87
120	1	10.75	27	2.51	49.9	3.87
120	1	10.75	28	2.60	49.9	3.87
120	1	11	18	1.64	49.9	3.96
120	1	11	19	1.73	50.4	3.96
120	1	11	20	1.82	50.8	3.96
120	1	11	21	1.91	51.0	3.96
120	1	11	22	2.00	51.0	3.96
120	1	11	23	2.09	51.1	3.96
120	1	11	24	2.18	51.1	3.96
120	1	11	25	2.27	51.1	3.96
120	1	11	26	2.36	51.1	3.96
120	1	11	27	2.45	51.1	3.96
120	1	11	28	2.55	51.1	3.96
120	1	11.25	18	1.60	50.8	4.05
120	1	11.25	19	1.69	51.4	4.05
120	1	11.25	20	1.78	51.8	4.05
120	1	11.25	21	1.87	52.1	4.05
120	1	11.25	22	1.96	52.2	4.05
120	1	11.25	23	2.04	52.2	4.05
120	1	11.25	24	2.13	52.2	4.05
120	1	11.25	25	2.22	52.2	4.05
120	1	11.25	26	2.31	52.2	4.05

**MSHA Approval Number: 120G-12.0**  
**120 psi MICON GOB-ISOLATION HYBRID II SEAL**  
**Covered by U.S. Patent No. 5,385,504 and/or**  
**one or more pending U.S. and international patent applications**

120	1	11.25	27	2.40	52.2	4.05
120	1	11.25	28	2.49	52.2	4.05
120	1	11.5	18	1.57	51.6	4.14
120	1	11.5	19	1.65	52.3	4.14
120	1	11.5	20	1.74	52.8	4.14
120	1	11.5	21	1.83	53.1	4.14
120	1	11.5	22	1.91	53.3	4.14
120	1	11.5	23	2.00	53.3	4.14
120	1	11.5	24	2.09	53.4	4.14
120	1	11.5	25	2.17	53.4	4.14
120	1	11.5	26	2.26	53.4	4.14
120	1	11.5	27	2.35	53.4	4.14
120	1	11.5	28	2.43	53.4	4.14
120	1	11.75	18	1.53	52.4	4.23
120	1	11.75	19	1.62	53.2	4.23
120	1	11.75	20	1.70	53.7	4.23
120	1	11.75	21	1.79	54.2	4.23
120	1	11.75	22	1.87	54.4	4.23
120	1	11.75	23	1.96	54.5	4.23
120	1	11.75	24	2.04	54.5	4.23
120	1	11.75	25	2.13	54.5	4.23
120	1	11.75	26	2.21	54.5	4.23
120	1	11.75	27	2.30	54.5	4.23
120	1	11.75	28	2.38	54.5	4.23
120	1	12	18	1.50	53.2	4.32
120	1	12	19	1.58	54.0	4.32
120	1	12	20	1.67	54.7	4.32
120	1	12	21	1.75	55.1	4.32
120	1	12	22	1.83	55.5	4.32
120	1	12	23	1.92	55.6	4.32
120	1	12	24	2.00	55.6	4.32
120	1	12	25	2.08	55.7	4.32
120	1	12	26	2.17	55.7	4.32
120	1	12	27	2.25	55.7	4.32
120	1	12	28	2.33	55.7	4.32
120	1	12.25	18	1.47	54.0	4.41
120	1	12.25	19	1.55	54.8	4.41

**MSHA Approval Number: 120G-12.0**  
**120 psi MICON GOB-ISOLATION HYBRID II SEAL**  
**Covered by U.S. Patent No. 5,385,504 and/or**  
**one or more pending U.S. and international patent applications**

120	1	12.25	20	1.63	55.6	4.41
120	1	12.25	21	1.71	56.1	4.41
120	1	12.25	22	1.80	56.5	4.41
120	1	12.25	23	1.88	56.7	4.41
120	1	12.25	24	1.96	56.8	4.41
120	1	12.25	25	2.04	56.9	4.41
120	1	12.25	26	2.12	56.9	4.41
120	1	12.25	27	2.20	56.9	4.41
120	1	12.25	28	2.29	56.9	4.41
120	1	12.5	18	1.44	54.7	4.50
120	1	12.5	19	1.52	55.6	4.50
120	1	12.5	20	1.60	56.4	4.50
120	1	12.5	21	1.68	57.0	4.50
120	1	12.5	22	1.76	57.5	4.50
120	1	12.5	23	1.84	57.8	4.50
120	1	12.5	24	1.92	57.9	4.50
120	1	12.5	25	2.00	57.9	4.50
120	1	12.5	26	2.08	58.0	4.50
120	1	12.5	27	2.16	58.0	4.50
120	1	12.5	28	2.24	58.0	4.50
120	1	12.75	18	1.41	55.4	4.59
120	1	12.75	19	1.49	56.4	4.59
120	1	12.75	20	1.57	57.3	4.59
120	1	12.75	21	1.65	57.9	4.59
120	1	12.75	22	1.73	58.5	4.59
120	1	12.75	23	1.80	58.8	4.59
120	1	12.75	24	1.88	59.0	4.59
120	1	12.75	25	1.96	59.1	4.59
120	1	12.75	26	2.04	59.2	4.59
120	1	12.75	27	2.12	59.2	4.59
120	1	12.75	28	2.20	59.2	4.59
120	1	13	18	1.38	56.1	4.68
120	1	13	19	1.46	57.2	4.68
120	1	13	20	1.54	58.1	4.68
120	1	13	21	1.62	58.8	4.68
120	1	13	22	1.69	59.4	4.68
120	1	13	23	1.77	59.8	4.68

**MSHA Approval Number: 120G-12.0**  
**120 psi MICON GOB-ISOLATION HYBRID II SEAL**  
**Covered by U.S. Patent No. 5,385,504 and/or**  
**one or more pending U.S. and international patent applications**

120	1	13	24	1.85	60.1	4.68
120	1	13	25	1.92	60.2	4.68
120	1	13	26	2.00	60.2	4.68
120	1	13	27	2.08	60.3	4.68
120	1	13	28	2.15	60.3	4.68
120	1	13.25	18	1.36	56.8	4.77
120	1	13.25	19	1.43	57.9	4.77
120	1	13.25	20	1.51	58.9	4.77
120	1	13.25	21	1.58	59.7	4.77
120	1	13.25	22	1.66	60.3	4.77
120	1	13.25	23	1.74	60.8	4.77
120	1	13.25	24	1.81	61.2	4.77
120	1	13.25	25	1.89	61.4	4.77
120	1	13.25	26	1.96	61.4	4.77
120	1	13.25	27	2.04	61.5	4.77
120	1	13.25	28	2.11	61.5	4.77
120	1	13.5	18	1.33	57.4	4.86
120	1	13.5	19	1.41	58.6	4.86
120	1	13.5	20	1.48	59.6	4.86
120	1	13.5	21	1.56	60.5	4.86
120	1	13.5	22	1.63	61.2	4.86
120	1	13.5	23	1.70	61.8	4.86
120	1	13.5	24	1.78	62.2	4.86
120	1	13.5	25	1.85	62.4	4.86
120	1	13.5	26	1.93	62.6	4.86
120	1	13.5	27	2.00	62.6	4.86
120	1	13.5	28	2.07	62.7	4.86
120	1	13.75	18	1.31	58.0	4.95
120	1	13.75	19	1.38	59.3	4.95
120	1	13.75	20	1.45	60.4	4.95
120	1	13.75	21	1.53	61.3	4.95
120	1	13.75	22	1.60	62.1	4.95
120	1	13.75	23	1.67	62.7	4.95
120	1	13.75	24	1.75	63.2	4.95
120	1	13.75	25	1.82	63.5	4.95
120	1	13.75	26	1.89	63.7	4.95
120	1	13.75	27	1.96	63.7	4.95

**MSHA Approval Number: 120G-12.0**  
**120 psi MICON GOB-ISOLATION HYBRID II SEAL**  
**Covered by U.S. Patent No. 5,385,504 and/or**  
**one or more pending U.S. and international patent applications**

120	1	13.75	28	2.04	63.8	4.95
120	1	14	18	1.29	58.6	5.04
120	1	14	19	1.36	59.9	5.04
120	1	14	20	1.43	61.1	5.04
120	1	14	21	1.50	62.1	5.04
120	1	14	22	1.57	62.9	5.04
120	1	14	23	1.64	63.6	5.04
120	1	14	24	1.71	64.1	5.04
120	1	14	25	1.79	64.5	5.04
120	1	14	26	1.86	64.8	5.04
120	1	14	27	1.93	64.8	5.04
120	1	14	28	2.00	64.9	5.04
120	1	14.25	18	1.26	59.2	5.13
120	1	14.25	19	1.33	60.6	5.13
120	1	14.25	20	1.40	61.8	5.13
120	1	14.25	21	1.47	62.8	5.13
120	1	14.25	22	1.54	63.7	5.13
120	1	14.25	23	1.61	64.5	5.13
120	1	14.25	24	1.68	65.1	5.13
120	1	14.25	25	1.75	65.5	5.13
120	1	14.25	26	1.82	65.8	5.13
120	1	14.25	27	1.89	66.0	5.13
120	1	14.25	28	1.96	66.1	5.13
120	1	14.5	18	1.24	59.8	5.22
120	1	14.5	19	1.31	61.2	5.22
120	1	14.5	20	1.38	62.5	5.22
120	1	14.5	21	1.45	63.6	5.22
120	1	14.5	22	1.52	64.5	5.22
120	1	14.5	23	1.59	65.3	5.22
120	1	14.5	24	1.66	66.0	5.22
120	1	14.5	25	1.72	66.5	5.22
120	1	14.5	26	1.79	66.9	5.22
120	1	14.5	27	1.86	67.1	5.22
120	1	14.5	28	1.93	67.2	5.22
120	1	14.75	18	1.22	60.3	5.31
120	1	14.75	19	1.29	61.8	5.31
120	1	14.75	20	1.36	63.1	5.31

**MSHA Approval Number: 120G-12.0**  
**120 psi MICON GOB-ISOLATION HYBRID II SEAL**  
**Covered by U.S. Patent No. 5,385,504 and/or**  
**one or more pending U.S. and international patent applications**

120	1	14.75	21	1.42	64.3	5.31
120	1	14.75	22	1.49	65.3	5.31
120	1	14.75	23	1.56	66.1	5.31
120	1	14.75	24	1.63	66.8	5.31
120	1	14.75	25	1.69	67.4	5.31
120	1	14.75	26	1.76	67.9	5.31
120	1	14.75	27	1.83	68.2	5.31
120	1	14.75	28	1.90	68.3	5.31
120	1	15	18	1.20	60.9	5.40
120	1	15	19	1.27	62.4	5.40
120	1	15	20	1.33	63.8	5.40
120	1	15	21	1.40	65.0	5.40
120	1	15	22	1.47	66.0	5.40
120	1	15	23	1.53	66.9	5.40
120	1	15	24	1.60	67.7	5.40
120	1	15	25	1.67	68.3	5.40
120	1	15	26	1.73	68.8	5.40
120	1	15	27	1.80	69.2	5.40
120	1	15	28	1.87	69.4	5.40
120	1	15.25	18	1.18	61.4	5.49
120	1	15.25	19	1.25	63.0	5.49
120	1	15.25	20	1.31	64.4	5.49
120	1	15.25	21	1.38	65.7	5.49
120	1	15.25	22	1.44	66.8	5.49
120	1	15.25	23	1.51	67.7	5.49
120	1	15.25	24	1.57	68.5	5.49
120	1	15.25	25	1.64	69.2	5.49
120	1	15.25	26	1.70	69.8	5.49
120	1	15.25	27	1.77	70.2	5.49
120	1	15.25	28	1.84	70.5	5.49
120	1	15.5	18	1.16	61.9	5.58
120	1	15.5	19	1.23	63.5	5.58
120	1	15.5	20	1.29	65.0	5.58
120	1	15.5	21	1.35	66.3	5.58
120	1	15.5	22	1.42	67.5	5.58
120	1	15.5	23	1.48	68.5	5.58
120	1	15.5	24	1.55	69.4	5.58

**MSHA Approval Number: 120G-12.0**  
**120 psi MICON GOB-ISOLATION HYBRID II SEAL**  
**Covered by U.S. Patent No. 5,385,504 and/or**  
**one or more pending U.S. and international patent applications**

120	1	15.5	25	1.61	70.1	5.58
120	1	15.5	26	1.68	70.7	5.58
120	1	15.5	27	1.74	71.2	5.58
120	1	15.5	28	1.81	71.5	5.58
120	1	15.75	18	1.14	62.4	5.67
120	1	15.75	19	1.21	64.1	5.67
120	1	15.75	20	1.27	65.6	5.67
120	1	15.75	21	1.33	67.0	5.67
120	1	15.75	22	1.40	68.2	5.67
120	1	15.75	23	1.46	69.2	5.67
120	1	15.75	24	1.52	70.2	5.67
120	1	15.75	25	1.59	71.0	5.67
120	1	15.75	26	1.65	71.6	5.67
120	1	15.75	27	1.71	72.1	5.67
120	1	15.75	28	1.78	72.5	5.67
120	1	16	18	1.13	62.8	5.76
120	1	16	19	1.19	64.6	5.76
120	1	16	20	1.25	66.2	5.76
120	1	16	21	1.31	67.6	5.76
120	1	16	22	1.38	68.9	5.76
120	1	16	23	1.44	70.0	5.76
120	1	16	24	1.50	70.9	5.76
120	1	16	25	1.56	71.8	5.76
120	1	16	26	1.63	72.5	5.76
120	1	16	27	1.69	73.1	5.76
120	1	16	28	1.75	73.5	5.76
120	1	16.25	18	1.11	63.3	5.85
120	1	16.25	19	1.17	65.1	5.85
120	1	16.25	20	1.23	66.7	5.85
120	1	16.25	21	1.29	68.2	5.85
120	1	16.25	22	1.35	69.5	5.85
120	1	16.25	23	1.42	70.7	5.85
120	1	16.25	24	1.48	71.7	5.85
120	1	16.25	25	1.54	72.6	5.85
120	1	16.25	26	1.60	73.4	5.85
120	1	16.25	27	1.66	74.0	5.85
120	1	16.25	28	1.72	74.5	5.85



**MSHA Approval Number: 120G-12.0**  
**120 psi MICON GOB-ISOLATION HYBRID II SEAL**  
**Covered by U.S. Patent No. 5,385,504 and/or**  
**one or more pending U.S. and international patent applications**

120	1	16.5	18	1.09	63.7	5.94
120	1	16.5	19	1.15	65.6	5.94
120	1	16.5	20	1.21	67.3	5.94
120	1	16.5	21	1.27	68.8	5.94
120	1	16.5	22	1.33	70.2	5.94
120	1	16.5	23	1.39	71.4	5.94
120	1	16.5	24	1.45	72.4	5.94
120	1	16.5	25	1.52	73.4	5.94
120	1	16.5	26	1.58	74.2	5.94
120	1	16.5	27	1.64	74.9	5.94
120	1	16.5	28	1.70	75.4	5.94
120	1	16.75	18	1.07	64.1	6.03
120	1	16.75	19	1.13	66.1	6.03
120	1	16.75	20	1.19	67.8	6.03
120	1	16.75	21	1.25	69.4	6.03
120	1	16.75	22	1.31	70.8	6.03
120	1	16.75	23	1.37	72.0	6.03
120	1	16.75	24	1.43	73.2	6.03
120	1	16.75	25	1.49	74.2	6.03
120	1	16.75	26	1.55	75.0	6.03
120	1	16.75	27	1.61	75.7	6.03
120	1	16.75	28	1.67	76.4	6.03
120	1	17	18	1.06	64.5	6.12
120	1	17	19	1.12	66.5	6.12
120	1	17	20	1.18	68.3	6.12
120	1	17	21	1.24	69.9	6.12
120	1	17	22	1.29	71.4	6.12
120	1	17	23	1.35	72.7	6.12
120	1	17	24	1.41	73.9	6.12
120	1	17	25	1.47	74.9	6.12
120	1	17	26	1.53	75.8	6.12
120	1	17	27	1.59	76.6	6.12
120	1	17	28	1.65	77.3	6.12
120	1	17.25	18	1.04	64.9	6.21
120	1	17.25	19	1.10	67.0	6.21
120	1	17.25	20	1.16	68.8	6.21
120	1	17.25	21	1.22	70.5	6.21

**MSHA Approval Number: 120G-12.0**  
**120 psi MICON GOB-ISOLATION HYBRID II SEAL**  
**Covered by U.S. Patent No. 5,385,504 and/or**  
**one or more pending U.S. and international patent applications**

120	1	17.25	22	1.28	72.0	6.21
120	1	17.25	23	1.33	73.3	6.21
120	1	17.25	24	1.39	74.6	6.21
120	1	17.25	25	1.45	75.6	6.21
120	1	17.25	26	1.51	76.6	6.21
120	1	17.25	27	1.57	77.4	6.21
120	1	17.25	28	1.62	78.1	6.21
120	1	17.5	18	1.03	65.3	6.30
120	1	17.5	19	1.09	67.4	6.30
120	1	17.5	20	1.14	69.3	6.30
120	1	17.5	21	1.20	71.0	6.30
120	1	17.5	22	1.26	72.6	6.30
120	1	17.5	23	1.31	74.0	6.30
120	1	17.5	24	1.37	75.2	6.30
120	1	17.5	25	1.43	76.4	6.30
120	1	17.5	26	1.49	77.4	6.30
120	1	17.5	27	1.54	78.2	6.30
120	1	17.5	28	1.60	79.0	6.30
120	1	17.75	18	1.01	65.7	6.39
120	1	17.75	19	1.07	67.8	6.39
120	1	17.75	20	1.13	69.8	6.39
120	1	17.75	21	1.18	71.5	6.39
120	1	17.75	22	1.24	73.1	6.39
120	1	17.75	23	1.30	74.6	6.39
120	1	17.75	24	1.35	75.9	6.39
120	1	17.75	25	1.41	77.1	6.39
120	1	17.75	26	1.46	78.1	6.39
120	1	17.75	27	1.52	79.0	6.39
120	1	17.75	28	1.58	79.8	6.39
120	1	18	18	1.00	66.0	6.48
120	1	18	19	1.06	68.2	6.48
120	1	18	20	1.11	70.2	6.48
120	1	18	21	1.17	72.0	6.48
120	1	18	22	1.22	73.7	6.48
120	1	18	23	1.28	75.2	6.48
120	1	18	24	1.33	76.5	6.48
120	1	18	25	1.39	77.8	6.48

**MSHA Approval Number: 120G-12.0**  
**120 psi MICON GOB-ISOLATION HYBRID II SEAL**  
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120	1	18	26	1.44	78.8	6.48
120	1	18	27	1.50	79.8	6.48
120	1	18	28	1.56	80.7	6.48
120	1	18.25	18	0.99	66.4	6.57
120	1	18.25	19	1.04	68.6	6.57
120	1	18.25	20	1.10	70.6	6.57
120	1	18.25	21	1.15	72.5	6.57
120	1	18.25	22	1.21	74.2	6.57
120	1	18.25	23	1.26	75.8	6.57
120	1	18.25	24	1.32	77.2	6.57
120	1	18.25	25	1.37	78.4	6.57
120	1	18.25	26	1.42	79.6	6.57
120	1	18.25	27	1.48	80.6	6.57
120	1	18.25	28	1.53	81.5	6.57
120	1	18.5	18	0.97	66.7	6.66
120	1	18.5	19	1.03	69.0	6.66
120	1	18.5	20	1.08	71.1	6.66
120	1	18.5	21	1.14	73.0	6.66
120	1	18.5	22	1.19	74.7	6.66
120	1	18.5	23	1.24	76.3	6.66
120	1	18.5	24	1.30	77.8	6.66
120	1	18.5	25	1.35	79.1	6.66
120	1	18.5	26	1.41	80.3	6.66
120	1	18.5	27	1.46	81.3	6.66
120	1	18.5	28	1.51	82.3	6.66
120	1	18.75	18	0.96	67.0	6.75
120	1	18.75	19	1.01	69.3	6.75
120	1	18.75	20	1.07	71.5	6.75
120	1	18.75	21	1.12	73.4	6.75
120	1	18.75	22	1.17	75.2	6.75
120	1	18.75	23	1.23	76.9	6.75
120	1	18.75	24	1.28	78.4	6.75
120	1	18.75	25	1.33	79.7	6.75
120	1	18.75	26	1.39	80.9	6.75
120	1	18.75	27	1.44	82.0	6.75
120	1	18.75	28	1.49	83.0	6.75
120	1	19	18	0.95	67.3	6.84

**MSHA Approval Number: 120G-12.0**  
**120 psi MICON GOB-ISOLATION HYBRID II SEAL**  
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120	1	19	19	1.00	69.7	6.84
120	1	19	20	1.05	71.9	6.84
120	1	19	21	1.11	73.9	6.84
120	1	19	22	1.16	75.7	6.84
120	1	19	23	1.21	77.4	6.84
120	1	19	24	1.26	79.0	6.84
120	1	19	25	1.32	80.4	6.84
120	1	19	26	1.37	81.6	6.84
120	1	19	27	1.42	82.8	6.84
120	1	19	28	1.47	83.8	6.84
120	1	19.25	18	0.94	67.6	6.93
120	1	19.25	19	0.99	70.0	6.93
120	1	19.25	20	1.04	72.3	6.93
120	1	19.25	21	1.09	74.3	6.93
120	1	19.25	22	1.14	76.2	6.93
120	1	19.25	23	1.19	77.9	6.93
120	1	19.25	24	1.25	79.5	6.93
120	1	19.25	25	1.30	81.0	6.93
120	1	19.25	26	1.35	82.3	6.93
120	1	19.25	27	1.40	83.5	6.93
120	1	19.25	28	1.45	84.5	6.93
120	1	19.5	18	0.92	67.8	7.02
120	1	19.5	19	0.97	70.3	7.02
120	1	19.5	20	1.03	72.6	7.02
120	1	19.5	21	1.08	74.7	7.02
120	1	19.5	22	1.13	76.7	7.02
120	1	19.5	23	1.18	78.5	7.02
120	1	19.5	24	1.23	80.1	7.02
120	1	19.5	25	1.28	81.6	7.02
120	1	19.5	26	1.33	82.9	7.02
120	1	19.5	27	1.38	84.1	7.02
120	1	19.5	28	1.44	85.2	7.02
120	1	19.75	18	0.91	68.1	7.11
120	1	19.75	19	0.96	70.7	7.11
120	1	19.75	20	1.01	73.0	7.11
120	1	19.75	21	1.06	75.2	7.11
120	1	19.75	22	1.11	77.1	7.11

**MSHA Approval Number: 120G-12.0**  
**120 psi MICON GOB-ISOLATION HYBRID II SEAL**  
**Covered by U.S. Patent No. 5,385,504 and/or**  
**one or more pending U.S. and international patent applications**

120	1	19.75	23	1.16	79.0	7.11
120	1	19.75	24	1.22	80.6	7.11
120	1	19.75	25	1.27	82.1	7.11
120	1	19.75	26	1.32	83.5	7.11
120	1	19.75	27	1.37	84.8	7.11
120	1	19.75	28	1.42	86.0	7.11
120	1	20	18	0.90	68.4	7.20
120	1	20	19	0.95	71.0	7.20
120	1	20	20	1.00	73.4	7.20
120	1	20	21	1.05	75.6	7.20
120	1	20	22	1.10	77.6	7.20
120	1	20	23	1.15	79.4	7.20
120	1	20	24	1.20	81.2	7.20
120	1	20	25	1.25	82.7	7.20
120	1	20	26	1.30	84.2	7.20
120	1	20	27	1.35	85.5	7.20
120	1	20	28	1.40	86.7	7.20