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(21) International Application Number: PCT/US99/01879 (22) International Filing Date: 18 February 1999 (18.02.99) (30) Priority Data: PCT/US98/15874 30 July 1998 (30.07.98) US 09/138,355 21 August 1998 (21.08.98) US PCT/US98/17293 21 August 1998 (21.08.98) US 09/249,814 16 February 1999 (16.02.99) US (71) Applicant: UNITED STATES GYPSUM COMPANY [US/US]; 125 South Franklin Street, Chicago, IL 60606 (US). (72) Inventors: YU, Qiang; 1252 Sandpiper Court, Grayslake, IL 60030 (US). SUCECH, Steven, W.; 36568 Eastmoor, Lake Villa, IL 60046 (US). GROZA, Brent, E.; 1713 Belle Haven Drive, Grayslake, IL 60030 (US). MLINAC, Raymond, J.; 33139 North Shamon Drive, Wildwood, IL 60030 (US). JONES, Frederick, T.; 354 West Trail, Grayslake, IL 60030 (US). BOEHNERT, Frederick, M.; 1243 Ridgewood Drive, Highland Park, IL 60035 (US). (74) Agent: JIANCI, David, F.; USG Corporation, 700 North Highway 45, Libertyville, IL 60048-1296 (US).		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published With international search report.																																																																	
(54) Title: GYPSUM-CONTAINING PRODUCT HAVING INCREASED RESISTANCE TO PERMANENT DEFORMATION AND METHOD AND COMPOSITION FOR PRODUCING IT																																																																			
Stapled & Screwed Ceiling Sag Comparison <table border="1"> <caption>Approximate Deflection Data from Graph</caption> <thead> <tr> <th>Days Under High Humidified Condition</th> <th>1/2" SHEETROCK (inches)</th> <th>5/8" Type X (inches)</th> <th>1/2" Gold Bond (inches)</th> <th>1/2" BOARD OF INVENTION (inches)</th> </tr> </thead> <tbody> <tr><td>0</td><td>0.000</td><td>0.000</td><td>0.000</td><td>0.000</td></tr> <tr><td>1</td><td>0.240</td><td>0.050</td><td>0.040</td><td>0.010</td></tr> <tr><td>2</td><td>0.260</td><td>0.080</td><td>0.060</td><td>0.015</td></tr> <tr><td>3</td><td>0.270</td><td>0.100</td><td>0.070</td><td>0.018</td></tr> <tr><td>4</td><td>0.280</td><td>0.110</td><td>0.080</td><td>0.020</td></tr> <tr><td>5</td><td>0.290</td><td>0.120</td><td>0.090</td><td>0.022</td></tr> <tr><td>6</td><td>0.295</td><td>0.125</td><td>0.095</td><td>0.023</td></tr> <tr><td>7</td><td>0.298</td><td>0.128</td><td>0.098</td><td>0.024</td></tr> <tr><td>8</td><td>0.299</td><td>0.130</td><td>0.100</td><td>0.024</td></tr> <tr><td>9</td><td>0.299</td><td>0.130</td><td>0.100</td><td>0.024</td></tr> <tr><td>10</td><td>0.299</td><td>0.130</td><td>0.100</td><td>0.024</td></tr> <tr><td>11</td><td>0.299</td><td>0.130</td><td>0.100</td><td>0.024</td></tr> </tbody> </table>			Days Under High Humidified Condition	1/2" SHEETROCK (inches)	5/8" Type X (inches)	1/2" Gold Bond (inches)	1/2" BOARD OF INVENTION (inches)	0	0.000	0.000	0.000	0.000	1	0.240	0.050	0.040	0.010	2	0.260	0.080	0.060	0.015	3	0.270	0.100	0.070	0.018	4	0.280	0.110	0.080	0.020	5	0.290	0.120	0.090	0.022	6	0.295	0.125	0.095	0.023	7	0.298	0.128	0.098	0.024	8	0.299	0.130	0.100	0.024	9	0.299	0.130	0.100	0.024	10	0.299	0.130	0.100	0.024	11	0.299	0.130	0.100	0.024
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(57) Abstract The invention provides a set gypsum-containing product having increased resistance to permanent deformation and a method for preparing it comprising forming a mixture of a calcium sulfate material, water, and an appropriate amount of one or more enhancing materials chosen from condensed phosphoric acids, each of which comprises 2 or more phosphoric acid units; and salts or ions of condensed phosphates, each of which comprises 2 or more phosphate units. The mixture is then maintained under conditions sufficient for the calcium sulfate material to form a set gypsum material.																																																																			