

## Proposal #6: Building Envelope Certification October 25, 2006

### I. CCTF Direction

In the May 24, 2006 meeting, the Task Force directed staff to draft a proposal that would require certification and training for individuals employed by contractors to properly install elements of a building envelope.<sup>1</sup> The Task Force also instructed staff to draft a proposal that would require contractors to take continuing education for building envelope construction.<sup>2</sup>

### II. Testimony

Many panelists in the Phase I discussions advocated for some form of certification beyond the current Oregon requirements. During his previous testimony about standards, Larry Peabody also mentioned that certification and training should focus on windows, siding, roofing and deck installations.<sup>3</sup> Joe Johnson, of Johnson Construction Consulting suggested that builders should be certified in building envelope construction.<sup>4</sup> Ray Miller, of Miller Consulting Engineers, indicated that certification requirements for contractors may improve workers' knowledge of construction requirements and practices.<sup>5</sup>

In the February 15, 2006 meeting Andrew Beyer, of Walsh Construction Co., testified that the Task Force should consider requiring "field training" and certification for general contractors and subcontractors for building envelope system installation.<sup>6</sup> Similarly, Tim Bogart, of Bogart Construction Enterprises, Inc. stated that a certification in weather resistant barriers and installing windows, flashing and siding is needed.<sup>7</sup> Glyn Jones, of S.D. Deacon Enterprises, Inc. testified that contractors should possess basic knowledge before getting a contractor license.<sup>8</sup> Royal Robinson, of Plasterers and Cement Masons Local 528, suggested that the Task Force consider a licensing and certification process for building envelope specialists.<sup>9</sup> Finally, Mike Thompson, of Roofers Local 49, stated that roofing should be a licensed trade; in the alternative, Mr. Thompson suggested certification by manufacturers would suffice.<sup>10</sup>

### III. Licensing Requirements in Oregon

In Oregon, contractors are divided into several broad classifications – general contractors, residential-only contractors, and specialty contractors. The classifications are separated by the scope of work a contractor undertakes in their business operations. In every classification, an applicant for a contractor license must meet training requirements set by the Construction Contractors Board. <sup>11</sup> The content of the required training must "relate to business practices and laws affecting construction contractors."<sup>12</sup>

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<sup>1</sup> Minutes, Construction Claims Task Force 8 (May 24, 2006).

<sup>2</sup> *Id.*, at 7.

<sup>3</sup> Minutes, Construction Claims Task Force 6 (September 21, 2005).

<sup>4</sup> Minutes, Construction Claims Task Force 6 (November 1, 2005).

<sup>5</sup> Minutes, Construction Claims Task Force 6 (December 2, 2005).

<sup>6</sup> Minutes, Construction Claims Task Force 4 (February 15, 2006).

<sup>7</sup> *Id.*

<sup>8</sup> *Id.*

<sup>9</sup> *Id.*, at 5.

<sup>10</sup> *Id.*

<sup>11</sup> ORS 701.072(1).

<sup>12</sup> *Id.* Before the 2005 legislative session, statute required applicants take 16 hours of prerequisite education in subjects enumerated by rule. *See* ORS 701.280 (2003).

Current administrative rules require education providers cover sixteen hours over several topical areas: laws and rules of the Construction Contractors Board, employment law, business practices, building codes, OSHA regulations, sound environment practices and laws, contract law, Oregon construction lien law, and finally project management.<sup>13</sup> The building codes component of the required training covers “applicable codes” – the code that applies on a given project, building code books, permitted work and exceptions, inspections, occupancy permits, and the like.<sup>14</sup> To administer the examination required by CCB administrative rule, the state contracts with a third-party testing service, Inc. to proctor the examination.

For Oregon contractors, training occurs at the beginning of the license cycle – the Construction Contractors Board promulgates rules to set training requirements “for individuals and businesses seeking to be licensed.”<sup>15</sup> However, once the contractor receives a license, no additional competency development, like a required course or continuing education, is needed to preserve that license.

#### IV. Competency Requirements of Contractors In Other States

Many states do not require prior training or experience from applicants prior to obtaining a license. Connecticut, Idaho, Michigan, Montana, New Jersey, Texas, and Washington register contractors, but do not compel a person to take a class or prove completion of classroom instruction or on-the-job training. Contractors registered for singular purposes, like the warranty security fund in New Jersey or workers’ compensation insurance in Montana, do not require additional steps. Twenty states (in addition to the province of British Columbia, Canada) out of the twenty-five surveyed by staff either registered, licensed or certified contractors. Eleven states – Alaska, Arizona, California, Florida, Hawaii, Minnesota, Nevada, North Carolina, Tennessee, Utah and Virginia – and the province of British Columbia, Canada require some form of competency for contractors that may be involved with envelope construction. Their specific legal requirements are listed below.

##### A. Competency Requirements in Alaska

Alaska issues “endorsements” to contractors undertaking residential construction work.<sup>16</sup> An applicant for a residential contractor license in Alaska must already possess a general contractor certification before taking an examination.<sup>17</sup> However, an applicant does not need any specified experience or education in order to obtain a general contractor license.<sup>18</sup> Additionally, educational courses, apprenticeships and other forms of prior training and experience are not required before sitting for the examination. The examination for the residential contractor endorsement tests applicants on the “arctic structural and thermal construction techniques and other matters as determined by the department in consultation with representatives of the construction industry.”<sup>19</sup> Alaska requires further competency training after the issuance of the endorsement. Within two years of successfully completing the examination, the applicant must also take the “craftsman home program” presented by the Department of Commerce or a “postsecondary course in arctic engineering, or its equivalent.”<sup>20</sup>

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<sup>13</sup> OAR 812-006-0050(2).

<sup>14</sup> OAR 812-006-0050(2)(d).

<sup>15</sup> ORS 701.072(1).

<sup>16</sup> ALASKA STAT. § 08.18.025(a).

<sup>17</sup> ALASKA STAT. § 08.18.025(b)(1)-(2).

<sup>18</sup> See ALASKA STAT. § 08.18.011.

<sup>19</sup> ALASKA STAT. § 08.18.025(b)(2).

<sup>20</sup> ALASKA STAT. § 08.18.025(b)(4).

Alaska contracts with a third-party administrator to proctor the residential contractor endorsement examination. The current third-party provider administers a test that covers such subjects as carpentry, finishes, concrete, thermal and moisture protection, masonry, doors, windows, building code requirements and inspections.<sup>21</sup> As with the administration of the contractor examinations, Alaska also utilizes third-party providers to provide the craftsman home program training. According to one third-party provider, the craftsman home program instructs attendees in the “building science concepts necessary to build energy-efficient homes.”<sup>22</sup> The craftsman home program focuses on “construction materials and techniques that are appropriate for northern climates.”<sup>23</sup>

In order to renew the residential contractor endorsement, a contractor must also show “proof of continued competency relating to residential contracting that satisfies the department.”<sup>24</sup> The Department of Commerce generally requires applicants for renewal of a residential contractor endorsement show sixteen “contact” hours of continuing education in a two-year period.<sup>25</sup> “Contact” hours may be earned through classroom instruction. Business related topics that the department will accept include business management, land development and environmental regulations, building and property management, and first aid.<sup>26</sup> The department only allows an applicant to apply eight hours of business related classes toward meeting their continuing education requirements.<sup>27</sup> When taking technical classes, an applicant may receive credit for all sixteen hours of the applicant’s required education.<sup>28</sup> The applicant may take classes on construction codes, architecture, materials and energy issues, remodeling issues, and construction techniques.<sup>29</sup>

#### B. Competency Requirements in Arizona

To demonstrate initial competency, Arizona law requires an applicant for a contractor license to possess a certain amount of experience or training. Generally, each licensee must show at least four years of “practical or management trade” experience out of the last ten years.<sup>30</sup> Apprenticeships or on-the-job training opportunities are not specifically mentioned in statute, but could presumably form the basis of “practical or management trade” experience. Furthermore, where a contractor’s work will involve the installation of elements of a building envelope, the applicant must have experience specific to that work. An applicant may substitute up to two years required experience for “technical training in an accredited college or university or in a manufacturer’s accredited training program.”<sup>31</sup>

In addition to the experience requirements, applicants for a contractor’s license must demonstrate their qualifications through a written examination.<sup>32</sup> The contents of the exam include the general knowledge of building, safety, health and lien laws, the “administrative principles” of the contracting

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<sup>21</sup> See THOMSON PROMETRIC, 2006 CANDIDATE INFORMATION BULLETIN, STATE OF ALASKA RESIDENTIAL CONTRACTOR ENDORSEMENT (December 2005), available at [http://www.experioronline.com/pdf/AKResContractorcib\\_20051205.pdf](http://www.experioronline.com/pdf/AKResContractorcib_20051205.pdf).

<sup>22</sup> ALASKA CRAFTSMAN HOME PROGRAM, INC., ALASKA CRAFTSMAN HOME BUILDING WORKSHOPS (September 1999), available at <http://www.alaska.net/~achp/wkshpage.htm>.

<sup>23</sup> Id.

<sup>24</sup> ALASKA STAT. § 08.18.025(6)(c).

<sup>25</sup> ALASKA ADMIN. CODE tit. 12, § 21.650(a).

<sup>26</sup> ALASKA ADMIN. CODE tit. 12, § 21.650(f).

<sup>27</sup> Id.

<sup>28</sup> ALASKA ADMIN. CODE tit. 12, § 21.650(g).

<sup>29</sup> Id.

<sup>30</sup> ARIZ. REV. STAT. § 32-1122(F)(1). This requirement may be reduced if the Registrar of Contractor finds four years of experience in a particular trade “excessive.” Id.

<sup>31</sup> ARIZ. REV. STAT. § 32-1122(F)(1).

<sup>32</sup> ARIZ. REV. STAT. § 32-1122(F)(2).

business and the rules adopted by the Registrar of Contractors.<sup>33</sup> Applicants are also tested on their knowledge and understanding of plans and specifications applicable to the contractor's industry or craft, as well as standards of construction work and techniques and practices in the contractor's particular industry or craft.<sup>34</sup> Finally, applicants must demonstrate a "general understanding of other related construction trades."<sup>35</sup> As with Alaska, Arizona contracts with a third-party testing service to develop and administer its contractor examinations. For example, residential contractor license applicants are evaluated on subject areas like masonry, carpentry, thermal and moisture protection, doors, windows and finishes.<sup>36</sup>

Arizona does not require contractors, as a condition of maintaining a contractor license, to demonstrate continuing competency in their field.

#### C. Competency Requirements in California

California builders must meet competency requirements prior to taking an examination. A person – the contractor or a qualifying agent<sup>37</sup> – must prove that they have had, in the last ten years, at least four years of experience "as a journeyman, foreman, supervising employee or contractor."<sup>38</sup> California allows persons that have the knowledge and skill of a journeyman in a particular trade to qualify for a contractor license. Furthermore, an applicant that attended an accredited school or completed an approved apprenticeship program in the particular trade may substitute up to three years of the experience necessary to become a contractor.<sup>39</sup>

In terms of examinations, California law directs the Contractor State Licensing Board to examine applicants "to show such degree of knowledge and experience in the classification applied for, and such general knowledge of the building, safety, health and lien laws of the state and of the administrative principles of the contracting business as the board deems necessary for the safety and protection of the public."<sup>40</sup> California administers its own examinations to contractors, but generally the state tests applicants on both business administration and specific trade requirements. The Registrar of the Contractors' State Licensing Board "shall, under the Board's direction, prepare and revise the written examinations for" the various contractor licenses promulgated by regulation.<sup>41</sup>

California does not require contractors take continuing education as a condition of maintaining their license.

#### D. Competency Requirements in Florida

Florida law creates three paths for applicants to demonstrate initial competency for a contractor license. First, an applicant is deemed competent to sit for an examination with a degree from an accredited four-year college in an appropriate field of engineering, architecture of building construction and has one year experience in the contractor's field.<sup>42</sup> Second, an applicant with four years of active

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<sup>33</sup> ARIZ. REV. STAT. § 32-1122(F)(2)

<sup>34</sup> Id.

<sup>35</sup> Id.

<sup>36</sup> See THOMSON PROMETRIC, STATE OF ARIZONA B GENERAL RESIDENTIAL CONTRACTOR CONTENT OUTLINE, available at [http://www.experionline.com/pdf/I030633\\_20051201.pdf](http://www.experionline.com/pdf/I030633_20051201.pdf).

<sup>37</sup> See CAL. BUS. & PRO. CODE § 7068(b)(2)-(3). See also CAL CODE REGS. tit. 16, § 825(e).

<sup>38</sup> CAL CODE REGS. tit. 16, § 825(a).

<sup>39</sup> CAL CODE REGS. tit. 16, § 825(d).

<sup>40</sup> CAL. BUS. & PRO. CODE § 7068(a).

<sup>41</sup> CAL. CODE REGS. tit. 16, § 840.

<sup>42</sup> FLA. STAT. § 489.111(2)(c)(1).

experience as an apprentice or as a foreman with responsibility over other workers may sit for an examination, provided that the person has one year experience as a foreman.<sup>43</sup> Finally, a person with set combinations of experience and education may also sit for an examination.<sup>44</sup> The state also provides paths for currently-licensed contractors to move into other classifications, as long as they have gained a certain amount of experience.<sup>45</sup>

Unlike states mentioned earlier in this section that rely on the services of a third-party provider, Florida codifies many of its own testing requirements. Florida generally assesses an applicant's knowledge of business practices and the specifics of practicing in a particular trade.

For example, general contractors take an examination consisting of three tests.<sup>46</sup> Test one covers questions "related to the business and financial management of a contracting firm."<sup>47</sup> Test two of the general contractor examination assesses an applicant's knowledge of contract administration – 27% of the exam covers preconstruction activities, 40% on project contracts, 20% on obtaining licenses, permits and approvals, and 13% on construction procedures and operations.<sup>48</sup> Finally, test number three covers an applicant's ability to manage projects – 67% of the exam focuses on construction methods, materials, tools and equipment, 13% covers safety, and 20% covers reading plans and specifications.<sup>49</sup> The residential contractor examination also consists of three tests. Similarly to the general contractor examination, the first two tests cover the business and financial management as well as contract administration and operations.<sup>50</sup> The residential contractor examination also covers the same weighted subjects on project management.<sup>51</sup>

The roofing contractor examination covers the same business and financial management subjects as all other examinations.<sup>52</sup> Unlike the more general classifications of contractors, however, test two of the roofing examination specifically covers "general knowledge of the roofing trade."<sup>53</sup> For example, 20% of the general knowledge test covers 'built-up' roofs, 20% of the test covers shingles and shakes, 5% of the examination covers membrane waterproofing, and 5% covers drains and gutters.<sup>54</sup> Glass and glazing contractors take an examination that consists of 35% installation of product, 35% preconstruction activities, and other subjects related to glass and window installation.<sup>55</sup>

Like Alaska, Florida also requires additional competency development after a person receives a license. In order to develop building code knowledge, the state established a Building Code Education and Outreach Council to develop training on the state building code.<sup>56</sup> The council develops a "core curriculum" that is designed to test applicants on the "technical and administrative responsibilities in the

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<sup>43</sup> FLA. STAT. § 489.111(2)(c)(2).

<sup>44</sup> FLA. STAT. § 489.111(2)(c)(3).

<sup>45</sup> See FLA. STAT. § 489.111(2)(c)(4)-(5).

<sup>46</sup> FLA. ADMIN. CODE r. 61G4-16.001(1).

<sup>47</sup> FLA. ADMIN. CODE r. 61G4-16.001(1)(a).

<sup>48</sup> FLA. ADMIN. CODE r. 61G4-16.001(1)(b).

<sup>49</sup> FLA. ADMIN. CODE r. 61G4-16.001(1)(c).

<sup>50</sup> FLA. ADMIN. CODE r. 61G4-16.001(3)(a)-(b).

<sup>51</sup> FLA. ADMIN. CODE r. 61G4-16.001(3)(c).

<sup>52</sup> FLA. ADMIN. CODE r. 61G4-16.001(7)(a).

<sup>53</sup> FLA. ADMIN. CODE r. 61G4-16.001(7)(b).

<sup>54</sup> *Id.*

<sup>55</sup> FLA. ADMIN. CODE r. 61G4-16.001(19)(a)(2). See also FLA. ADMIN. CODE r. 61G4-16.001(19)(b) (defining "product" as, among other things, windows.)

<sup>56</sup> FLA. STAT. § 553.841(6).

effective execution of the code process.”<sup>57</sup> Core curriculum courses are mandatory, and must be completed by a contractor within two years of receiving an initial contractor license.<sup>58</sup> Code curriculum courses do not count toward the fourteen hours of continued education required from contractors.<sup>59</sup> The council also develops “advanced modules” to test the knowledge of applicants in specialized areas.<sup>60</sup> The Construction Industry Licensing Board sets the number of hours in advanced module instruction a contractor must take to maintain their license.<sup>61</sup> Currently, a contractor must take at least one hour of advanced module training approved by the Florida Building Commission.<sup>62</sup>

In the area of continuing education, Florida law generally requires all contractors take fourteen hours of classroom instruction in a two year period.<sup>63</sup> In addition to the general requirement of fourteen hours, the board “may approve specialized continuing education courses on compliance with the wind resistance provisions for one and two family dwellings contained in the Florida Building Code and any alternate methodologies for providing wind resistance which have been approved for use by the Florida Building Commission.”<sup>64</sup>

#### E. Competency Requirements in Hawaii

Hawaii, like other states mentioned, requires applicants and responsible managing employees to demonstrate initial competency before taking an examination. Hawaii law requires at least four years experience as a foreman, supervisor, or contractor in a particular trade.<sup>65</sup> Apprenticeships, on-the-job training opportunities and other trade programs are not specifically mentioned, but an “employee” can certainly include apprentices, journeymen and in-training employment. The state’s Contractor Licensing Board may, at its own discretion, also accept experience gained while self-employed or unlicensed.<sup>66</sup> The board may approve technical or business administration courses to substitute for the four years of experience; but unlike other states, Hawaii only gives applicants credits for up to one year of experience.<sup>67</sup>

Hawaii also tests applicants’ competency through examination. Administrative rule requires all applicants to complete a written examination.<sup>68</sup> Similar to the approach taken in other states, Hawaii contracts with a third-party entity for test administration services. Hawaii generally requires applicants take and successfully pass a two-part test. The first part covers the business practices and legal landscape of construction contracting.<sup>69</sup> The second part of the examination is the “content” portion of the examination – contractor license applicants must pass an examination geared to a specialty.<sup>70</sup> For example, An applicant for a ‘B’ general building contractor license must demonstrate knowledge of

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<sup>57</sup> FLA. STAT. § 553.841(7).

<sup>58</sup> FLA. STAT. § 553.841(6). *See also* FLA. STAT. § 489.115(4)(b)(3).

<sup>59</sup> FLA. STAT. § 553.841(7).

<sup>60</sup> *See* FLA. STAT. § 553.841(6)(b) (Advanced modules are “designed for use by each profession.”).

<sup>61</sup> FLA. STAT. § 489.115(4)(b)(4).

<sup>62</sup> FLA. ADMIN. CODE R. 61-G4-18.001(2).

<sup>63</sup> FLA. STAT. § 489.115(4)(b)(1). *See also* FLA. ADMIN. CODE R. 61G4-18.001(1).

<sup>64</sup> FLA. STAT. § 489.115(4)(b)(2).

<sup>65</sup> HAW. ADMIN. R. § 16-77-18(a).

<sup>66</sup> HAW. ADMIN. R. § 16-77-18(b).

<sup>67</sup> HAW. ADMIN. R. § 16-77-19.

<sup>68</sup> HAW. ADMIN. R. § 16-77-39

<sup>69</sup> *Id.*

<sup>70</sup> HAW. ADMIN. R. § 16-77-40.

rough carpentry, concrete, ‘associated trades’, exterior finishes, excavation and sitework, and roofing.<sup>71</sup> The content examination for the C-55 waterproofing contractor license covers above-grade and below-grade waterproofing systems, dampproofing and vapor barriers.<sup>72</sup> The C5-B siding application contractor examination tests applicants on vinyl siding, aluminum siding and other related aspects.<sup>73</sup> The C-42 roofing contractor application is comprised of questions on low-slope roofs, wood shingles and shakes, and components.<sup>74</sup>

Continuing education is not a requisite of maintaining a contractor license in Hawaii.

#### F. Competency Requirements in Minnesota

Minnesota only licenses residential contractors and remodelers. Minnesota’s general categories consist of residential building contractors, residential remodelers and roofers.<sup>75</sup> The Commissioner of the Department of Labor and Industries may set the qualifications necessary for an applicant to be able to take an examination, including any “related education experience and education, the examination procedure, and the examination for each licensing group.”<sup>76</sup> However, there is currently no prerequisite competency requirements to be able to take the examination. As far as content, examinations must contain “appropriate knowledge of technical terms commonly used and the knowledge of reference materials and code books to be used for technical information,” as well as “understanding of the general principles of business management and other pertinent state laws.”<sup>77</sup>

Like other states, Minnesota contracts with a third-party administrator to develop and proctor these examinations. The residential contractor examination consists of twelve subject matter categories.<sup>78</sup> An applicant’s competency in residential construction is tested in plans and specifications, envelope criteria for meeting energy code requirements, building planning and life safety, sitework, concrete and masonry, carpentry, roofing, exterior finishes, foam plastic insulation, interior finishes and associated trades.<sup>79</sup> Under these general categories are specific subheadings on the areas that the examination will cover.<sup>80</sup> Residential remodeler applicants take essentially the same test as the residential building contractors.<sup>81</sup> Roofing contractors take a similar test, except that Minnesota focuses 24% of the questions on flashing requirements.<sup>82</sup>

In regard to continuing education, Minnesota law gives the Commissioner of the Department of Labor and Industry, in consultation with the Builder State Advisory Council, authority to set continuing

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<sup>71</sup> THOMSON PROMETRIC, INC., B GENERAL BUILDING CONTRACTOR CONTENT OUTLINE (January 2006), available at [http://www.experioronline.com/pdf/111503\\_20060104.pdf](http://www.experioronline.com/pdf/111503_20060104.pdf).

<sup>72</sup> THOMSON PROMETRIC, INC., C-55 WATERPROOFING CONTRACTOR CONTENT OUTLINE (January 2006), available at [http://www.experioronline.com/pdf/111546\\_20060104.pdf](http://www.experioronline.com/pdf/111546_20060104.pdf).

<sup>73</sup> THOMSON PROMETRIC, INC., C-5B SIDING APPLICATION CONTRACTOR CONTENT OUTLINE, (January 2006), available at [http://www.experioronline.com/pdf/111509\\_20060104.pdf](http://www.experioronline.com/pdf/111509_20060104.pdf).

<sup>74</sup> THOMSON PROMETRIC, INC., C-42 ROOFING CONTRACTOR CONTENT OUTLINE (January 2006), available at [http://www.experioronline.com/pdf/111536\\_20060104.pdf](http://www.experioronline.com/pdf/111536_20060104.pdf).

<sup>75</sup> See MINN. STAT. § 326.83(7) (definition of “licensee”).

<sup>76</sup> Id.

<sup>77</sup> MINN. STAT. § 326.89(3)(1)-(2).

<sup>78</sup> PROMISSOR, INC., MINNESOTA DEPARTMENT OF LABOR AND INDUSTRY RESIDENTIAL CONTRACTOR CONTENT OUTLINE (July 2006), available at <http://www.asisvcs.com/publications/pdf/052403.pdf>.

<sup>79</sup> Id.

<sup>80</sup> Id.

<sup>81</sup> PROMISSOR, INC., MINNESOTA DEPARTMENT OF LABOR AND INDUSTRY RESIDENTIAL REMODELER CONTENT OUTLINE (July 2006), available at <http://www.asisvcs.com/publications/pdf/052404.pdf>.

<sup>82</sup> See PROMISSOR, INC., MINNESOTA DEPARTMENT OF LABOR AND INDUSTRY RESIDENTIAL REMODELER CONTENT OUTLINE (July 2006), available at <http://www.asisvcs.com/publications/pdf/052405.pdf>.

education requirements for all residential contractors.<sup>83</sup> Any continuing education standards developed under this statutory directive must include provisions on how to implement the state’s energy code, as well as other building code requirements designed to conserve energy.<sup>84</sup> Minnesota requires that qualifying persons obtain seven hours of continuing education credit per year.<sup>85</sup> The content, examinations, credit earned, and other standards for continuing education are promulgated by administrative rule.<sup>86</sup>

#### G. Competency Requirements in Nevada

In demonstrating competency to apply for a contractor license, Nevada law tracks closely with the California approach – applicants must show “such a degree of experience...[and] such general knowledge of the building, health, safety, and lien laws of the State of Nevada and the administrative principles of the contracting business as the board deems necessary.”<sup>87</sup> In addition to the broad competency requirement, Nevada law requires applicants to show that, in the last ten years, they obtained at least four years of practical experience as a “journeyman, foreman, supervising employee or contractor.”<sup>88</sup> Apprentices that complete their respective trade program and on-the-job trainees that attain supervisory responsibilities are just two types of persons that may apply for a license. Nevada will also allow substitutions of up to three years of experience for prior training from an accredited college university or its equivalent.<sup>89</sup>

Nevada administrative rules actually state that an applicant for a contractor license must “take and pass an examination administered by an independent testing service.”<sup>90</sup> For instance, the C-15 roofing and siding contractor license requires a test covering various types of roofing materials and pitches, general knowledge of siding, sheet metal, and flashing.<sup>91</sup> Nevada does not require continuing education to maintain and develop the competency of existing licensees.

#### H. Competency Requirements in North Carolina

Unlike the other states that have prerequisite competency criteria, North Carolina does not require any prior education or experience in order to take a contractor examination. The State Licensing Board is directed by state law to examine all applicants for their knowledge of the practical application of the profession of contracting, including knowledge of estimating costs ethics and other similar matters.<sup>92</sup> Applicants also must demonstrate their ability to read plans and specifications, as well as know “relevant matters contained in the North Carolina Building Code.”<sup>93</sup> Tests also cover knowledge of the responsibilities of a contractor to the public, as well as state’s laws on contractors, construction and liens.<sup>94</sup>

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<sup>83</sup> MINN. STAT. § 326.87(1).

<sup>84</sup> Id.

<sup>85</sup> MINN. STAT. § 326.87(2).

<sup>86</sup> MINN. R. 2809.0060.

<sup>87</sup> NEV. REV. STAT. § 624.260(1).

<sup>88</sup> NEV. REV. STAT. § 624.260(5).

<sup>89</sup> Id.

<sup>90</sup> NEV. ADMIN. CODE § 624.600.

<sup>91</sup> See PSI EXAMINATION SERVICES, STATE OF NEVADA “C” CLASSIFICATION EXAMINATIONS, CANDIDATE INFORMATION BULLETIN 23 (August 2006), available at [http://candidate.psiexams.com/common/bulletin/display\\_bulletin.jsp?ro=yes&actionname=83&bulletinid=90&bulletinurl=.pdf](http://candidate.psiexams.com/common/bulletin/display_bulletin.jsp?ro=yes&actionname=83&bulletinid=90&bulletinurl=.pdf).

<sup>92</sup> N.C. GEN. STAT. § 87-10(b). See also 21 N.C. ADMIN. CODE 12.0402(a).

<sup>93</sup> N.C. GEN. STAT. § 87-10(b).

<sup>94</sup> Id.

Like other states, North Carolina contracts with a third-party examination administrator to develop and proctor their required examinations. For example, the building contractor examination developed and administered by the third-party entity covers subject areas like site work and masonry, carpentry, metals, roofing, associated trades and general building code requirements.<sup>95</sup> Residential builder examinations essentially cover the same general subject areas as general builders, except a greater emphasis is placed on drywall, energy conservation, and general residential code requirements.<sup>96</sup>

North Carolina only requires contractors demonstrate their competency at the beginning of the license process; the state does not require continuing education.

#### I. Competency Requirements in Tennessee

Tennessee's pre-examination competency requirement is discretionary. Under Tennessee law, if a candidate's application for a contractor license is satisfactory to the Board for Licensing Contractors, "then the applicant is entitled to an examination to determine the applicant's qualifications."<sup>97</sup>

To measure the competency of Tennessee applicants, the state employs the services of a third-party service to develop and administer examinations. Tennessee licensing regulations require written examinations on major contracting classifications.<sup>98</sup> The residential contractor examination, for example, tests applicants on site work, concrete and masonry, carpentry, roofing, and general residential code requirements.<sup>99</sup>

Tennessee does not require that licensed contractors take continuing education to maintain their competency.

#### J. Competency Requirements in Utah

Utah's approach of gauging competency follows the laws enacted in California, Hawaii and Nevada. Applicants for a contractor license in Utah must show "satisfactory evidence of knowledge and experience in the construction industry and knowledge of the principles of the conduct of business as a contractor, reasonably necessary for the protection of the public health, safety, and welfare."<sup>100</sup> Utah administrative rules divide the required experience up according to the license classification, but generally speaking the state requires that out of the last ten years, applicants show at least four years of experience as an employee of a licensed contractor.<sup>101</sup> Again, employee is an expansive term that can encompass persons entering a apprenticeship or on-the-job training. For general building contractors and residential/small commercial contractors, two years of experience must be in a supervisory or managerial capacity.<sup>102</sup> If the applicant holds a bachelor's or an associate's degree in construction management, the applicant may receive credit toward one year of the requisite supervisory experience.<sup>103</sup>

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<sup>95</sup> See PSI EXAMINATION SERVICES, STATE OF NORTH CAROLINA, LICENSING BOARD FOR GENERAL CONTRACTORS, CANDIDATE INFORMATION BULLETIN 8 (July 2006), available at [http://candidate.psiexams.com/common/bulletin/display\\_bulletin.jsp?ro=yes&actionname=83&bulletinid=106&bulletinurl=.pdf](http://candidate.psiexams.com/common/bulletin/display_bulletin.jsp?ro=yes&actionname=83&bulletinid=106&bulletinurl=.pdf).

<sup>96</sup> Id., at 24-25.

<sup>97</sup> TENN. CODE ANN. §62-6-111(2).

<sup>98</sup> See PSI EXAMINATION SERVICES, TENNESSEE BOARD FOR LICENSING CONTRACTORS, TENNESSEE CONTRACTOR CANDIDATE INFORMATION 1 (July 2006), available at [http://candidate.psiexams.com/common/bulletin/display\\_bulletin.jsp?ro=yes&actionname=83&bulletinid=200&bulletinurl=.pdf](http://candidate.psiexams.com/common/bulletin/display_bulletin.jsp?ro=yes&actionname=83&bulletinid=200&bulletinurl=.pdf).

<sup>99</sup> Id., at

<sup>100</sup> UTAH CODE ANN. § 58-55-302(1)(e)(ii).

<sup>101</sup> See UTAH ADMIN. CODE r. R156-55a-302b.

<sup>102</sup> UTAH ADMIN. CODE r. R156-55a-302b(2)(b).

<sup>103</sup> UTAH ADMIN. CODE r. R156-55a-302b(2)(c).

Roofing contractors need four out of ten years of experience in their particular trade, but need not have supervisory experience.<sup>104</sup>

Utah law also tests the competency of applicants; each applicant for a contractor license must “meet the examination requirements established by rule.”<sup>105</sup> Like the majority of the states that require examinations, Utah administers its licensing assessments through contracts with a third party entity. For example, the R100 residential/small commercial contractor license covers such subject areas as sitework, masonry, metals, woods, thermal and moisture protection, doors and windows, and finishes.<sup>106</sup> The B100 general building contractor license exam covers almost identical subject areas.<sup>107</sup> The R101 residential/small commercial non-structural remodel and repair license is comparable to the R100 license, but omits thermal and moisture protection competency.<sup>108</sup>

Utah recently required contractors take three hours of “core” continuing education and three hours of additional education to maintain their license.<sup>109</sup> The Uniform Building Code Commission approves continuing education courses; accepted courses must “be relevant to the practice of the construction trades and consistent with the laws and rules of [Utah].”<sup>110</sup> Course content generally includes construction codes, construction laws and rules, and construction practices.<sup>111</sup> The format is generally one of classroom instruction, and the instructors generally consist of state agencies and professional associations.<sup>112</sup>

#### K. Competency Requirements in Virginia

Virginia divides its contractors into three classes: Class ‘A’, ‘B’, and ‘C’ contractors.<sup>113</sup> Experience requirements vary based on the class of license. For example, a qualified individual for a Class A contractor license must possess a minimum of five years of experience in a specific trade.<sup>114</sup> Class B applicants only need to demonstrate three years of experience in a trade.<sup>115</sup> Class ‘C’ contractors do not take a general examination, but a qualifier for any classification or specialty must possess at least two years of experience in their particular trade.<sup>116</sup> All the classifications are vague as to the requisite experience; presumably, competency can be developed from a number of sources.

All Class A and B applicants pass a board approved examination, which can be administered by a testing service acting on behalf of the board.<sup>117</sup> Examinations for Class ‘A’ and ‘B’ contractors consist of four parts; the fourth part of the examination is geared toward gauging the applicant’s competency in building requirements – including layout, framing, ventilation, doors and windows, exterior elements,

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<sup>104</sup> UTAH ADMIN. CODE r. R156-55a-302b(3).

<sup>105</sup> UTAH CODE ANN. § 58-55-302(1)(c)(i).

<sup>106</sup> See THOMSON PROMETRIC, INC., STATE OF UTAH R100 RESIDENTIAL/SMALL COMMERCIAL CONTRACTOR CONTENT OUTLINE (November 2005), available at [http://www.experioronline.com/pdf/I420606\\_20051101.pdf](http://www.experioronline.com/pdf/I420606_20051101.pdf).

<sup>107</sup> See THOMSON PROMETRIC, INC., STATE OF UTAH B100 GENERAL BUILDING CONTRACTOR CONTENT OUTLINE (NOVEMBER 2005), available at [http://www.experioronline.com/pdf/I420604\\_20051101.pdf](http://www.experioronline.com/pdf/I420604_20051101.pdf).

<sup>108</sup> See THOMSON PROMETRIC, INC., STATE OF UTAH R101 RESIDENTIAL/SMALL COMMERCIAL NON-STRUCTURAL REMODEL AND REPAIR CONTENT OUTLINE (November 2005), available at [http://www.experioronline.com/pdf/I420608\\_20051101.pdf](http://www.experioronline.com/pdf/I420608_20051101.pdf).

<sup>109</sup> UTAH ADMIN. CODE r. R156-55a-303a(3).

<sup>110</sup> UTAH ADMIN. CODE r. R156-55a-303b(1)(a).

<sup>111</sup> UTAH ADMIN. CODE r. R156-55a-303b(2).

<sup>112</sup> UTAH ADMIN. CODE r. R156-55a-303b(3).

<sup>113</sup> See VA. CODE. ANN. §§ 54.1-1106 to 54.1-1108.2.

<sup>114</sup> 18 VA. ADMIN. CODE § 50-22-60(C)(2).

<sup>115</sup> 18 VA. ADMIN. CODE § 50-22-50(C)(2).

<sup>116</sup> 18 VA. ADMIN. CODE § 50-22-40(B)(2).

<sup>117</sup> 18 VA. ADMIN. CODE § 50-22-60(B)(3).

and masonry.<sup>118</sup> Once an applicant is issued a license, the state requires no further demonstrations of competency.

#### L. Competency Requirements in British Columbia

Provisions of British Columbia's Homeowner Protection Act regulate the licensing of residential builders.<sup>119</sup> The Registrar of the Homeowner Protection Office has the authority to review applications for residential builder licenses and issue licenses to those persons that meet the requirements of the Act and subsequent regulation.<sup>120</sup> Regulations under the Act state that residential builders must supply "a list of professional courses related to new home construction taken by each partner, officer, and director named [on the application], including industry accreditation."<sup>121</sup> Regulations do not provide for any prior experience requirements, or require a residential builder examination developed on behalf of or by the provincial Homeowner Protection Office.

#### V. Staff Analysis and Recommendations

The survey of competency requirements in other states illuminate several trends. First, a majority of the states require some prior experience or education before sitting for an examination. States generally required trade or supervisory experience; education could partially – but not totally – substitute for experience. All the states that required an applicant to demonstrate competency did so through an examination. The overwhelming majority of the states surveyed also used the services of a third-party testing entity to develop and administer the examinations. Continuing education also appeared in several states.

After analyzing the practices of other states, staff recommends the creation of an envelope certification for construction work on roofs, windows, exterior walls and doors. In Oregon, contractors are already responsible to local building departments and the Construction Contractors Board. Regulating "certified envelope specialists" through existing contractor laws would be an extension of a system already in place today. In other words, a separate certification would be required in addition to holding an appropriate CCB license for residential envelope work.

Staff recommends that the scope of the certification extends to all work directly related to the building envelope of a residential structure. The data presented by the actuarial report suggests that claims involving the building envelope on singly-family homes is the most common origin of construction defects. Given that 78% of reported claims involve water intrusion, 75% of claims involve the envelope, and 76% of claims affect single-family homes, staff recommends certifying only those contractors installing or contracting elements of a residential structure's building envelope<sup>122</sup>. The state building code already offers a demarcation point to separate what structures are considered "residential" from "commercial" structures. Staff recommends that the buildings that require the services of a certified envelope specialist are limited to detached single-family homes, duplexes, townhouses, rowhouses, and residential structures three stories or less in height.

Due to the fact that general contractors, residential-only contractors and specialty contractors may currently construct or work residential structures, staff recommends that the certification remain open to all licensed contractors. For instance, any contractor holding this certification may install siding,

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<sup>118</sup> 18 VA. ADMIN. CODE § 50-22-60(B)(3).

<sup>119</sup> Homeowner Protection Act, S.B.C. ch. 31 (1994) (Can.).

<sup>120</sup> Homeowner Protection Act, S.B.C. ch. 31, §8(1)(a)-(b) (1994) (Can.).

<sup>121</sup> Homeowner Protection Act Regulation, B.C. Reg. 274/2004.

<sup>122</sup> See AMERICAN ACTUARIAL CONSULTING GROUP, LLC, OREGON CCTF INSURANCE ANALYSIS: REFORMS, ALTERNATIVES AND PRICING 9-10 (July 26, 2006) (on file with author).

windows, doors, vapor barriers, and other related elements. Contractors without the certification may still construct elements of a building, but could not legally install windows or siding, repair a roof or other activities that involve envelope construction without the certification. Under this approach, a business would need at least one responsible managing individual certified as an envelope specialist in order to commence residential envelope work, but may employ as many certified individuals as the firm deems necessary. A sole proprietor that elected to work on building envelopes would also need to obtain the envelope certification.

Staff also recommends that a certified envelope specialist be responsible for a few important items. As part of the certification, a certified envelope specialist must ensure that construction work involving the building envelope meets code requirements and approved designs. In order to ensure proper installation, staff recommends that the certified envelope specialist train the firm's employees on the appropriate materials, code requirements and design requirements utilized at each particular jobsite. To verify that a structure was built to the approved design, staff recommends that a local building department should require additional verification by means of a checklist completed by the certified envelope specialist prior to the issuance of a certificate of occupancy. A certified envelope specialist's ultimate responsibility for completing projects in accordance with regulated standards should be a condition of the certification issued by the Construction Contractors Board; an adequate enforcement mechanism should also be part of the new certification.

In terms of competency requirements for a certified envelope specialist, staff recommends that the Construction Contractors Board receive the statutory authority to develop the criteria that defines the operation of a certification program. Once a person is certified, the person should maintain their certification by taking a set number of continuing education hours on substantive construction requirements. Staff recommends that a certified envelope specialist complete four hours of continuing education per year on building code requirements endemic to the building envelope, construction techniques, and other related matters.

Staff also suggests that the Task Force consider requiring code training to all responsible managing individuals – whether their work is residential or commercial in nature. Oregon's building codes change every three years, but there is no current requirement that contractors obtain ongoing education once licensed. The challenge is making sure that an appropriate responsible party for a contractor receive code change information in a timely manner. If the Task Force believes contractors should receive code change information, then staff would need to look at this issue further.

### Building Envelope Details

As staff researched and drafted the various proposals, staff addressed the concept to require specific envelope design details as part of the building plans submittal. For more information, please see *Proposal #7, Envelope Design Details*.

**Proposal #6: Staff recommends the following changes to the CCB licensing laws:**

- *Maintain the current CCB licensing system currently in place.*
- *Create a certification that is required for any contractor licensed in Oregon to undertake work directly involving the building envelope of a residential structure..*
- *For contracting firms, require contractors that work on elements of the building envelope employ at least one responsible managing individual who has obtained the certification.*
- *Limit scope of the certification to detached single-family homes, duplexes, townhouses, rowhouses, and residential structures three stories or less in height.*
- *Prohibit uncertified contractors from working on residential building envelopes.*
- *Modify as needed the appropriate CCB enforcement laws to ensure proper certification and any responsibilities required by the certification*
- *Require that a certified envelope specialist must ensure that construction work involving the building envelope meets code requirements and approved designs.*
- *Require a certified envelope specialist to train the firm's employees on the appropriate materials, code requirements and design requirements utilized at the particular structure.*
- *Require a certified envelope specialist to complete and submit additional verification to the local building department in order to obtain a certificate of occupancy.*
- *Require a set number of continuing education hours on substantive construction requirements.*

**Possible Change:**

- *Require all contractors take code change training.*