

築炉職種（築炉作業）

Job category: Furnace Installation, Furnace installation work (Operation: Furnace installation, Furnace installation work)

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| <p>作業の定義<br/>Criteria of Operation</p>   | <p>炉（※1）を安定稼働させるため、炉の内面に、最新の施工技術を用いて、高度の品質管理により耐火物（※2）を施工する作業をいう。<br/>In order to operate the furnace (* 1) stably, it refers to the work of installing refractories (* 2) by advanced quality control on the inner surface of the furnace using the latest construction technique.</p> <p>(※1) 炉には、鉄鉱石から鉄を作り出す溶鉱炉、銅・アルミ・ガラスなど各種金属・非鉄金属などを溶解・精錬する精錬炉、高温の熱を加えることにより、延ばしたり・加工したりする各種熱延・冷延加熱炉、熱処理炉等、又 耐火物・セメント・石灰・陶磁器・タイルなどを焼く『工業窯炉』、産業廃棄物処理用の『焼却炉・溶融炉』等多種多様に亘る。尚、食品調理用の窯炉（ピザ窯・パン窯）については、工業窯炉としての 高温・高圧力の機能を要求されないため、本職種の対象外である。<br/>(* 1) The furnace contains a smelting furnace that produces iron from iron ore, a smelting furnace that dissolves and refines various metals such as copper, aluminum, glass, etc., nonferrous metals, etc., to extend or process by applying high temperature heat Various types of hot rolling / cold rolling heating furnaces, heat treatment furnaces, etc., "industrial kiln furnaces" for burning refractories, cement, lime, ceramics and tiles, "incinerators and melting furnaces" for industrial waste disposal . For kiln furnaces for food preparation (pizza kilns and bakery ovens), because they do not require the function of high temperature and high pressure as an industrial kiln furnace, they are not covered by this job category.</p> <p>(※2) これらの炉の内部には、耐火材や断熱材などの耐火物が施工されており、この耐火物が千数百度以上もある高温溶融物や高温熱処理物から炉本体（缶体）を守る役割を担っている。<br/>(* 2) Refractory materials such as refractory materials and heat insulating materials are installed inside these furnaces, and this refractory is refractory materials from the high temperature melt and the high temperature heat treated material, which is over 1,000 or more degrees, from the furnace body (kantai: storage water heater body ) Is playing a role in protecting.</p> |   |  |
| <p>必須業務（移行対象職種・作業で必ず行う業務）<br/>Compulsory works (Works to be essential on the operations in the job categories to be shifted)</p> | <p>技能実習1号 Technical Intern Training (i)</p> <p><b>(1)築炉作業<br/>Furnace installation, Furnace installation work</b></p> <p>①墨出し作業<br/>① "Sumidashi" marking work<br/>②やりかたの製作及び設置作業<br/>② Production and installation work of "Yarikata"</p> <p>※In the preparatory stage of foundation work, the enclosure can be built with wood piles and rails as benchmark, which is called 'yarikata,'</p> <p>③れんがの割付作業（単純な配列）<br/>③ Assignment work of brick (simple arrangement)<br/>④れんが積み作業<br/>④ Brick laying operation</p> <p>1. 平らな表面でのト口付け及びれんが手加工作業<br/>1. Torozuke(attaching) and hand working of bricks on a flat surface</p> <p>2. 簡単な迫枠の製作作業<br/>2. Production work of a simple centering<br/>3. れんが積み用手工具による施工作業<br/>3. Construction work with brick loading hand tools<br/>4. 目地仕上げ作業<br/>4. Joint finishing work</p> <p>⑤炉材の形状、品質の区分及び選別作業<br/>⑤ Classification and quality classification and sorting of furnace materials</p> <p>1. 耐火煉瓦の形状、品質の区分及び選別作業<br/>1. Classification and quality classification and sorting work of refractory bricks<br/>2. 断熱煉瓦の形状、品質の区分及び選別作業<br/>2. Shape and quality classification and screening work of insulated bricks<br/>3. 不定形耐火物の品質の区分及び選別作業<br/>3. Classification and selection work of quality of monolithic refractories</p>  | <p>技能実習2号（1年目）<br/>Technical Intern Training (ii)(1st year)</p> <p><b>(1)築炉作業<br/>Furnace installation, Furnace installation work</b></p> <p>①墨出し作業<br/>① "Sumidashi" marking work<br/>②やりかたの製作及び設置作業<br/>② Production and installation work of "Yarikata"</p> <p>③れんがの割付作業（大きさの異なる配列含む）<br/>③ Assignment work of bricks (including arrangements of different sizes)<br/>④れんが積み作業<br/>④ Brick laying operation</p> <p>1. 湾曲した表面を含むト口付け及びれんが手加工作業<br/>1. Torozuke(attaching) and handling operations of bricks including curved surfaces</p> <p>2. 迫枠の製作作業<br/>2. Production work of a centering<br/>3. れんが積み用手工具による施工及び点検作業<br/>3. Construction work with brick loading hand tools<br/>4. 目地仕上げ作業<br/>4. Joint finishing work</p> <p>⑤不定形耐火物の施工作業<br/>⑤ Construction work of monolithic refractories</p> <p>⑥混練作業<br/>⑥ Kneading operation</p> <p>⑦炉材の形状、品質の区分及び選別作業<br/>⑦ Classification and quality classification and sorting of furnace materials</p> <p>1. 耐火煉瓦の形状、品質の区分及び選別作業<br/>1. Classification and quality classification and sorting work of refractory bricks<br/>2. 断熱煉瓦の形状、品質の区分及び選別作業<br/>2. Shape and quality classification and screening work of insulated bricks<br/>3. 不定形耐火物の品質の区分及び選別作業<br/>3. Classification and selection work of quality of monolithic refractories</p> | <p>技能実習2号（2年目）<br/>Technical Intern Training (ii)(2nd year)</p> <p><b>(1)築炉作業<br/>Furnace installation, Furnace installation work</b></p> <p>①墨出し作業<br/>① "Sumidashi" marking work<br/>②やりかたの製作及び設置作業<br/>② Production and installation work of "Yarikata"</p> <p>③れんがの割付作業（アーチ状などの複雑な配列含む）<br/>③ Assignment work of bricks (including complex arrays etc.)<br/>④れんが積み作業<br/>④ Brick laying operation</p> <p>1. 湾曲した表面を含むト口付け及びれんが手加工作業<br/>1. Torozuke(attaching) and handling operations of bricks including curved surfaces</p> <p>2. 迫枠の製作作業<br/>2. Production work of a centering<br/>3. れんが積み用手工具による施工及び点検作業<br/>3. Construction work with brick loading hand tools<br/>4. 目地仕上げ作業<br/>4. Joint finishing work</p> <p>⑤不定形耐火物の施工作業<br/>⑤ Construction work of monolithic refractories</p> <p>⑥混練作業<br/>⑥ Kneading operation</p> <p>⑦炉材の形状、品質の区分及び選別作業<br/>⑦ Classification and quality classification and sorting of furnace materials</p> <p>1. 耐火煉瓦の形状、品質の区分及び選別作業<br/>1. Classification and quality classification and sorting work of refractory bricks<br/>2. 断熱煉瓦の形状、品質の区分及び選別作業<br/>2. Shape and quality classification and screening work of insulated bricks<br/>3. 不定形耐火物の品質の区分及び選別作業<br/>3. Classification and selection work of quality of monolithic refractories</p> |

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|   | <p><b>(4)安全衛生作業 (4) Safety and health work</b></p> <p>①雇入れ時等の安全衛生教育<br/>① Safety and health education at the time of employment</p> <p>②作業開始前の安全確認作業（安全作業ミーティング、KY（危険予知）活動による安全作業の確保）<br/>② Safety confirmation work before commencing work (securing safety work by safety work meeting, KY (danger prediction) activity)</p> <p>③整理・整頓・清掃・清潔・習慣の遵守（5S活動の推進による不安全箇所の排除と維持・習慣化）<br/>③ organize and tidy-compliance with the cleaning, clean and customs (maintenance and habits of the elimination of unsafe places by promoting 5S activities)</p> <p>④作業者間の安全確認作業（報告・連絡・相談の徹底。相互注意の職場作り。）<br/>④ Safety confirmation work between workers (reporting, contact, thorough consultation, making work place for mutual attention.)</p> <p>⑤安全保護具の完全装着、標識・表示類の指差呼称による確認作業<br/>⑤ Completely wearing safety guards, confirmation work by indicator designation of signs and indicators</p> <p>⑥築炉作業における事故・疫病予防（類似災害防止活動の展開、事前のリスクアセスメントの実施、教育・訓練）<br/>⑥ accidents and plague prevention in Furnace Construction work (developing similar disaster prevention activities, the implementation of pre-risk assessment, education and training)</p> <p>⑦労働衛生上の有害性を防止するための作業（個々の現場特有の有害性を防止するための作業環境等を含めた安全対策処置。）<br/>⑦ work to prevent the harmful effects of occupational health (safety measures treatment, including the work environment, etc. in order to prevent the individual site-specific hazard.)</p> <p>⑧異常時の応急措置を修得するための作業（異常時、災害発生時の措置、対応「の教育・訓練）<br/>⑧ work to master the emergency measures at the time of abnormality (abnormal, measures in the event of a disaster, the corresponding "of education and training)</p> |
| <p>関連業務、周辺業務（上記必須業務に関する技能等の修得に係る業務等で該当するものを選択すること。） Related works, Peripheral works (Select what is applicable in works related to acquisition of skills etc concerning above essential tasks.)</p> | <p><b>(1)関連作業 (1) Related work</b></p> <p>①レベル・基準点確認/測定作業<br/>① level · reference point confirmation / measurement work</p> <p>②各種図面の読図作業<br/>② Reading of various drawings</p> <p>③作業工程管理作業<br/>③ Work process management task</p> <p>④れんが以外の耐火物 加工（機械カッター等）作業<br/>④ Processing refractories other than bricks (machine cutter etc.) work</p> <p>⑤耐火物解体作業<br/>⑤ Refractory dismantling work</p> <p><b>(2)周辺作業 (2) Peripheral work</b></p> <p>①耐火物材料 荷受・荷降し/運搬作業<br/>① Refractory material receiving / loading / transporting</p> <p>②耐火物材料 荷揚げ、荷降し/玉掛け作業(吊り上げ荷重に応じた特別教育、技能講習が必要)<br/>② Refractory material loading, unloading / rigging work(Special education and skill training according to lifting load are necessary.)</p> <p>③各種揚重運搬機械等の運転作業（各種機械装置に応じた特別教育、技能講習が必要。）<br/>③ Driving work of various lifting and transporting machinery, etc. (Special education and skill training according to various machinery equipment are necessary.)</p> <p>④仮設作業（足場組み、開口部養生等）（特別教育又は技能講習が必要）<br/>④ Temporary work (scaffold assembly, opening curing etc) (special education or skill training required)</p> <p>⑤安全標識・掲示物表示作業<br/>⑤ Safety signs / bulletin display work</p> <p>⑥落下物養生作業<br/>⑥ Falling material curing work</p> <p>⑦炉周り汚染防止養生作業<br/>⑦ Contamination prevention curing around the furnace</p> <p>⑧不要物の搬出作業<br/>⑧ Unloading unnecessary items</p> <p><b>(3)安全衛生作業（関連業務、周辺業務を行う場合は必ず実施する作業）</b><br/><b>(3) Safety and health work (work to be carried out whenever related work and peripheral work are carried out)</b></p> <p>上記※に同じ Same as ※ above</p>   |
| <p>使用する素材、材料等（該当するものを選択すること。） Materials to be used (Select the appropriate one)</p>   | <p><b>使用素材 Material used</b></p> <p>①清水（不定形材混練用）<br/>① Shimizu (for kneading amorphous materials)</p> <p>②木材（型枠用）<br/>② Wood (for formwork)</p> <p>③アンカー金物類<br/>③ Anchor hardware</p> <p>④耐火物材料<br/>④ Refractory materials</p> <p>1) 耐火煉瓦<br/>1) Refractory brick</p> <p>2) 耐火断熱れんが<br/>2) Fire insulation brick</p> <p>3) 不定形耐火材<br/>3) amorphous refractory material</p> <p>4) 耐火モルタル及び断熱モルタル類<br/>4) Refractory mortar and insulating mortar</p> <p>5) 断熱ボード類<br/>5) Thermal insulation board</p> <p>6) セラミックファイバー類<br/>6) ceramic fiber</p>  |

※1 共通項目  
Common items

※共通項目  
Common items

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| <p>使用する機械、器具等（該当するものを選択すること。）<br/>Machines, tools etc. to be used (Select the appropriate one)</p>                 | <p><b>(1) 機械、設備（附属品を含む）等 (1) Machinery, equipment (including accessories) etc.</b><br/>                 1) 共通設備<br/>1) common equipment<br/>                 1. 発電機<br/>1. Generator<br/>                 2. 電動ベルトコンベアー<br/>2. Electric Belt Conveyor<br/>                 3. 足場配管材一式<br/>3. Scaffolding piping material set<br/>                 4. 仮設補強用鋼材<br/>4. Temporary reinforcement steel<br/>                 5. エアコンプレッサー<br/>5. Air Compressor</p> <p>2) 専用機械、車両<br/>2) dedicated machine, vehicle<br/>                 6. ハンドミキサー<br/>6. Hand mixer<br/>                 7. ハンドパレット<br/>7. Hand Palette<br/>                 8. フォークリフト<br/>8. forklift<br/>                 9. 混練用ミキサー<br/>9. Mixer for kneading<br/>                 10. れんが切断機<br/>10. Brick cutting machine</p> <p><b>(2) 器工具等 (2) Equipment tools etc.</b><br/>                 1) 共通器工具<br/>1) Common tool<br/>                 1. れんが積み用手工具<br/>1. Brick loading hand tools<br/>                 2. 電工ドラム・投光器<br/>2. Electric Works Drum・Floodlight<br/>                 3. ドリル、レンチ、サンダー<br/>3. Drill, wrench, Thunder</p> <p>2) 専用器工具<br/>2) Special tool<br/>                 4. 木工用ジグソー<br/>Four. Jigsaw for woodworking<br/>                 5. 加工用カッター<br/>5. Processing cutter<br/>                 6. 解体用工具（チップー、ブレーカー、<br/>パール、ハンマー等<br/>6. Dismantling tools (Chipper, Breaker,<br/>Bars, hammers, etc.)<br/>                 7. ダイヤモンドカップ<br/>7. Diamond cup<br/>                 8. 荷揚げ用ワイヤー、シャックル<br/>8. Discharge wire, shackle</p> | <p>※共通項目<br/>Common items<br/>※<u>線</u>は、主に技能実習2号以降に使用する。<br/>※Under lines are mainly used after Technical Intern Training (ii)</p> <p>※共通項目<br/>Common items<br/>※<u>線</u>は、主に技能実習2号以降に使用する。<br/>※Under lines are mainly used after Technical Intern Training (ii)</p> |
| <p>製品等の例（該当するものを選択すること。） Examples of products etc. (Select the appropriate one.)</p>                               | <p>鉄鋼業；高炉、熱風炉、コークス炉、鉄鋼鍋・転炉、圧延・冷延加熱炉、熱処理炉等<br/>Steel industry; blast furnace, hot air furnace, coke oven, steel pan / converter, rolling / cold rolling heating furnace, heat treatment furnace, etc.<br/>                 非鉄/金属・製造業；銅、アルミ、亜鉛、ガラス等溶解炉、セメント、石灰炉等焼却炉、各種陶磁器窯業炉、産業廃棄物焼却炉等<br/>Nonferrous metals・Manufacturing industry; melting furnace such as copper, aluminum, zinc, glass etc. incinerator such as cement, lime furnace, various ceramics furnace, industrial waste incinerator etc.</p>   |   |
| <p>移行対象職種・作業とはならない業務例 Example of works which is not eligible for the job categories / operations to be shifted</p> | <p>1. コンクリートブロック積み作業<br/>1. Concrete block loading work<br/>                 2. タイル張り作業<br/>2. Tiling work<br/>                 3. 断熱ボード貼り付けのみの作業<br/>3. In case of insulation board pasting work only<br/>                 4. 足場組立作業のみの場合<br/>4. For scaffold assembling work only</p> <p>5. 材料の調合及び混練作業のみの場合<br/>5. In case of Mixing and kneading works of materials only<br/>                 6. 材料の運搬・荷揚げ玉掛け作業のみの場合<br/>6. In case of transporting and unloading the material only<br/>                 7. 型枠製作・取り付け作業のみの場合<br/>7. In case of formwork production and installation work only<br/>                 8. 上記の関連作業及び周辺作業のみの場合<br/>8. In the case of only the above related work and peripheral work<br/>                 9. 食品（パン、ピザ等）製造用窯炉の築炉作業<br/>9. Construction furnace work of furnace for manufacturing food (bread, pizza etc.)</p>  |   |