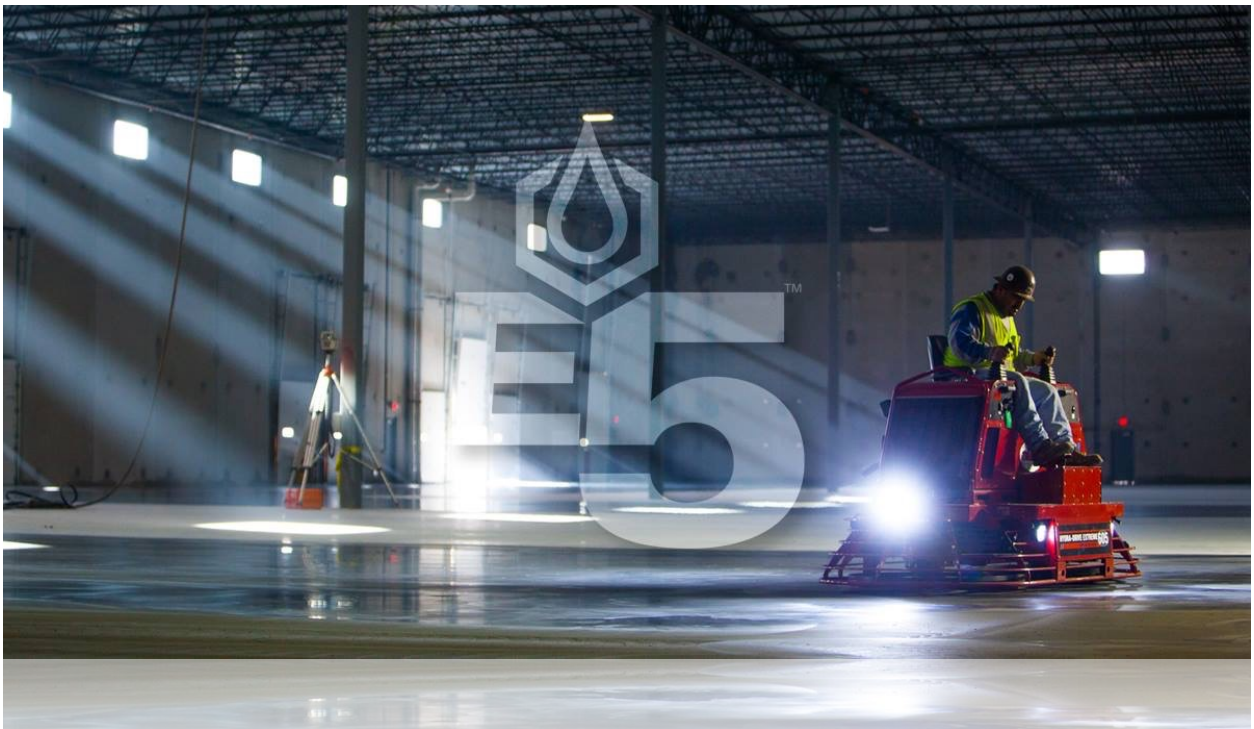
E5 Optimized Slab for Polishing - QA Steps and Checkpoints
Sustainable Structures LLC
Created by Rory Bosma
December 16th, 2025

Optimizing a Slab for Polishing: System Guide



This system provides the most cost effective and efficient way to create a flat, dense, concrete slab for polishing. Please refer to Manufacturer Technical Data Sheets and refer to this system guide for details of the system implementation key QA inspection steps.

This optimized system should be discussed with the Owner, Structural Engineer, Architect, General Contractor, Finisher, Ready Mix Provider, and Polishing Contractor in advance so that there is plenty of time to answer all questions and plan accordingly.

A Qualified Sustainable Structures LLC representative will be responsible for interpreting this document if needed, and providing in person support at the jobsite and in meetings.

1. PREPARE SUB GRADE

Sub grade should be uniform, free from ruts, mounds and valleys and finished flat to a tolerance of + zero, - 0.5 inch. Concrete shall be placed on a double layer of plastic sheeting. The purpose of the plastic sheeting is to reduce sub grade restraint, not to function as a vapor barrier. Two layers of 6 mil plastic sheeting is sufficient for the purpose of reducing sub grade restraint.

2. CONTRACTION JOINTS

Joints shall be located such that the length/width ratio of each floor panel is less than 1.5 and as nearly square as possible. Saw-cut joints shall be cut to a minimum depth of 1/3 the slab thickness or 2", whichever is greater. Joint spacing can be increased up to 100' if 3 dimensional twisted steel reinforcement is utilized (such as Helix Steel™). Joint spacing can be increased up to 50' if synthetic fibers are used (such as Forta Ferro™ or ICF™). Joint spacing can be increased up to 25' if synthetic fibers or standard reinforcement is used such as deformed rebar per structural engineer design requirements. If extended joint spacing is desired the structural drawings need to be reviewed by the fiber manufacturer so that loading etc. can be considered and then a dosage rate and letter will be provided. Manufacturer recommendations for dosing, mixing, and finishing should be followed from the fiber manufacturer. (Note: Helix Steel fibers and most other synthetic fibers are not ideal for a ground and polished slab, since the fibers pull out and in the case of Helix Steel fibers this can cause damage to foot traffic. These options are best suited for a large warehouse floor that receives E5 Catalyst and is wet polished with power trowels a day or two after placement). The best option for general polishing, if fibers are desired for extended joint spacing and further crack control, are AC60 fibers from ICF™.

The table below gives requirements for the joints.

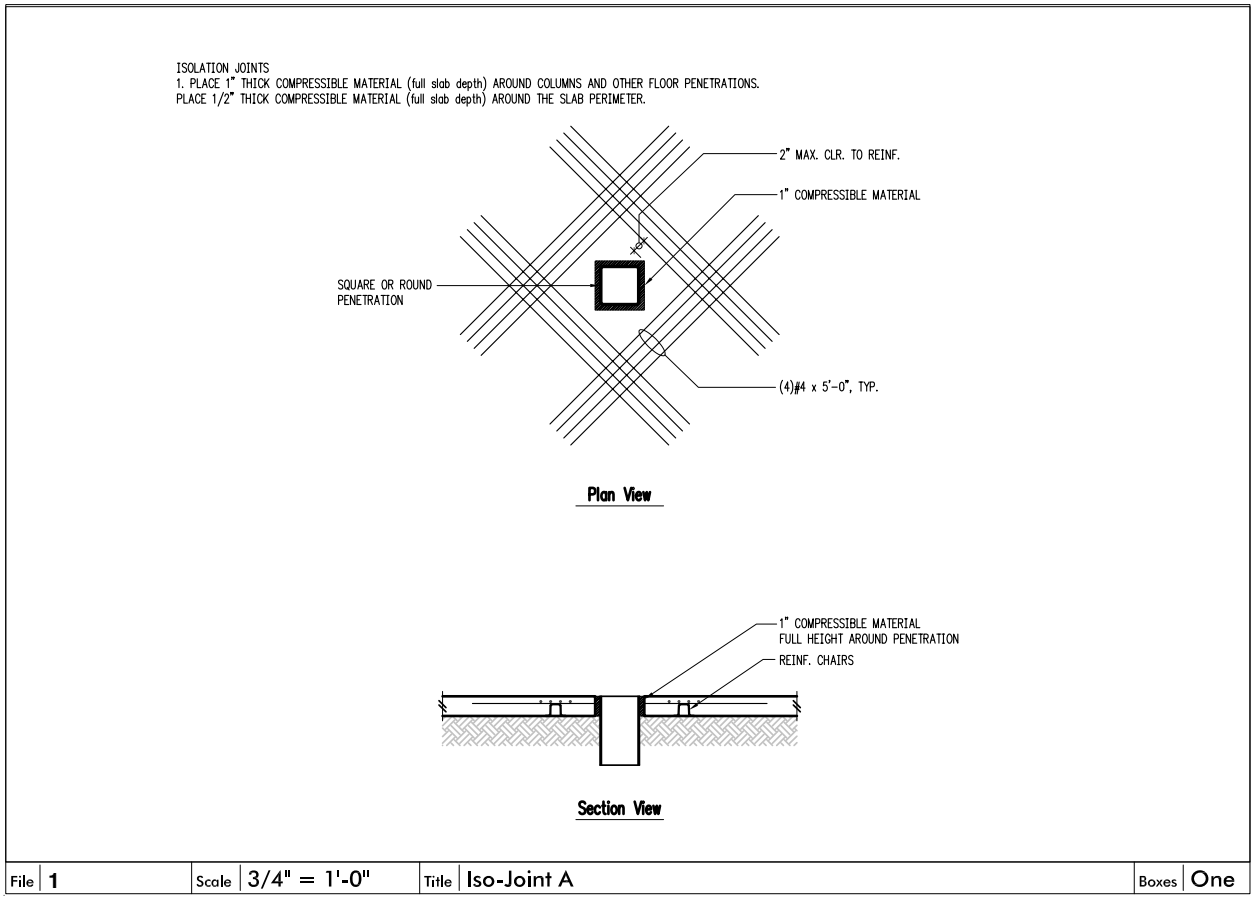
Undoweled Joints	Doweled Joints
a. Minimum CBR of 6 or modulus of sub grade reaction of 150 psi/in b. Joint spacing ≥ 25' c. If either requirement is not met, all joints must be doweled	a. Joint spacing ≥ 50' b. Dowel size, length and spacing based on ACI 360-10, Table 6.1 c. Dowels and dowel placement shall conform to ACI 360-10, Section 6.2

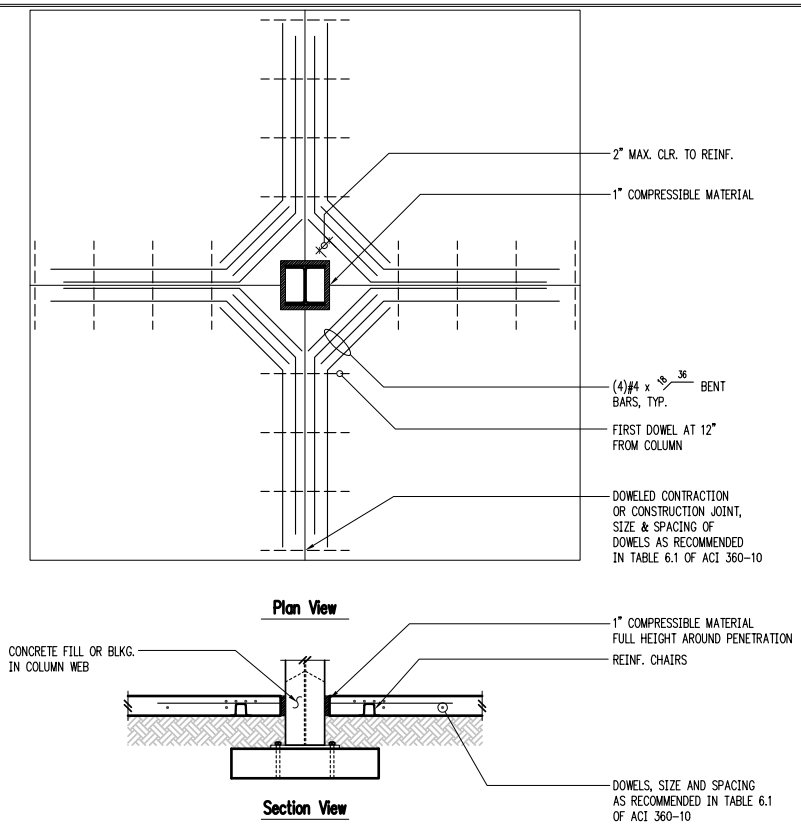
3. ISOLATION JOINTS

Place 1' thick compressible material (full slab depth) around columns and other floor penetrations. Place 1/2" thick compressible material (full slab depth) around the slab perimeter.

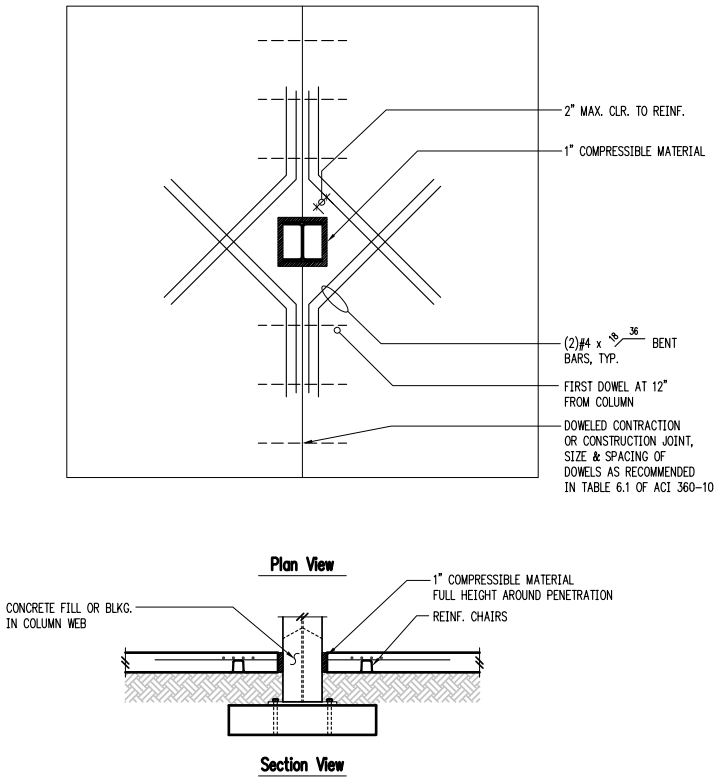
4. SUPPLEMENTAL REINFORCING

Provide diagonal bars at all columns, floor penetrations and re-entrant corners as specified by the structural engineer and according to the recommended details below:

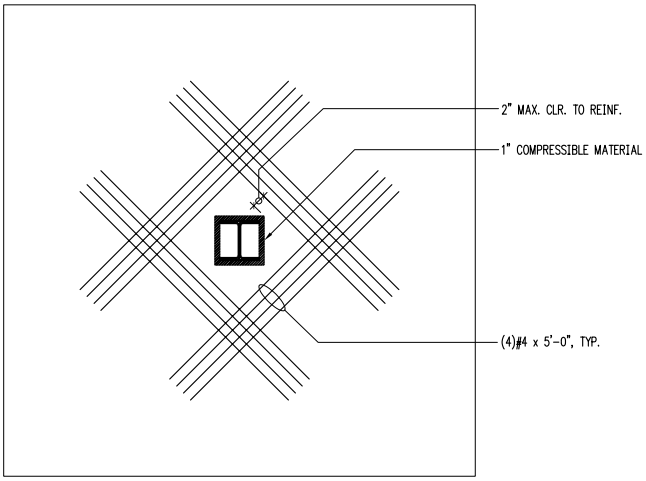


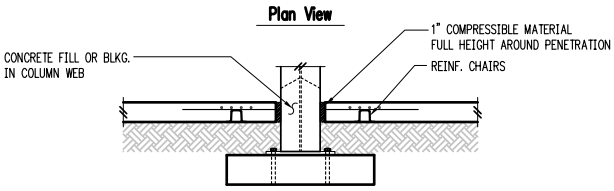


File	2	Scale	3/4" = 1'-0"	Title	Iso-Joint B	Boxes	One



File	3	Scale	3/4" = 1'-0"	Title	Iso-Joint C	Boxes	One

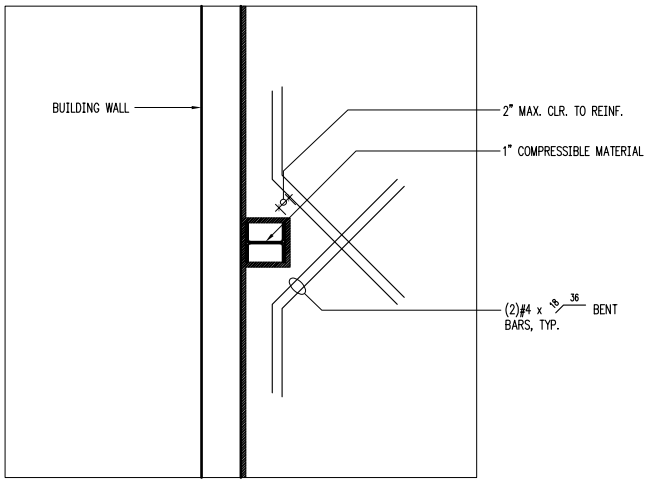


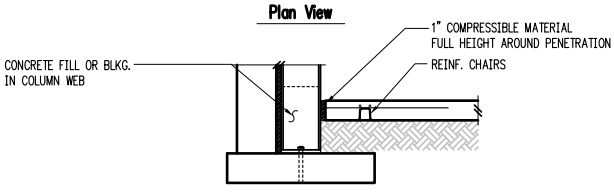


Plan View

Section View

File	Scale	Title	Boxes
4	3/4" = 1'-0"	Iso-Joint D	One

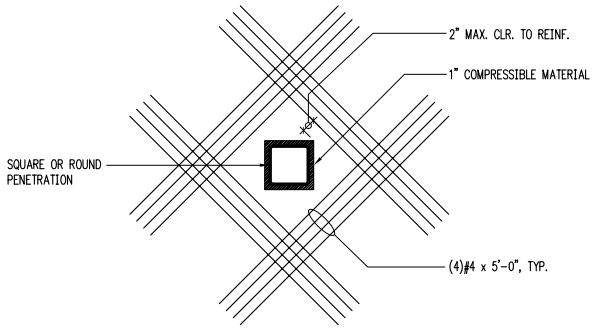




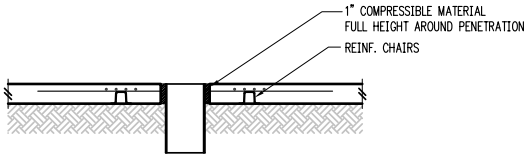
Plan View

Section View

File	Scale	Title	Boxes
5	3/4" = 1'-0"	Iso-Joint E	One

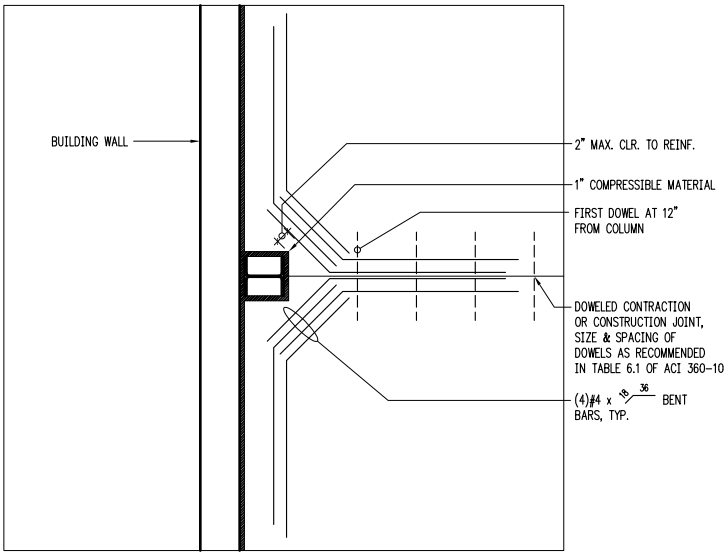


Plan View

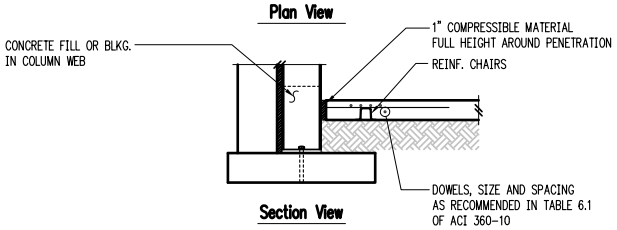


Section View

File	Scale	Title	Boxes
6	3/4" = 1'-0"	Iso-Joint F	One

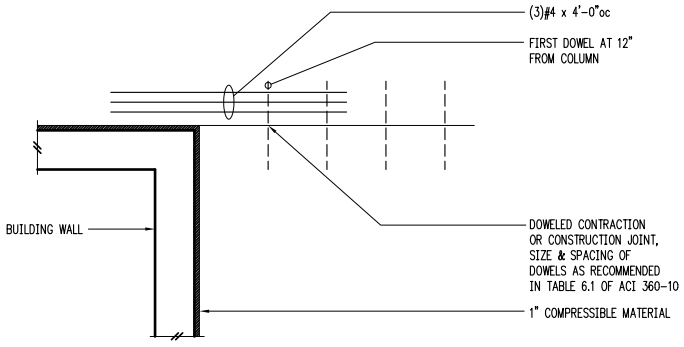


Plan View

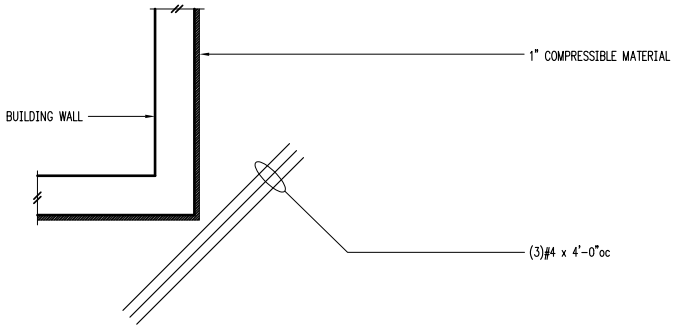


Section View

File	Scale	Title	Boxes
7	3/4" = 1'-0"	Iso-Joint G	One

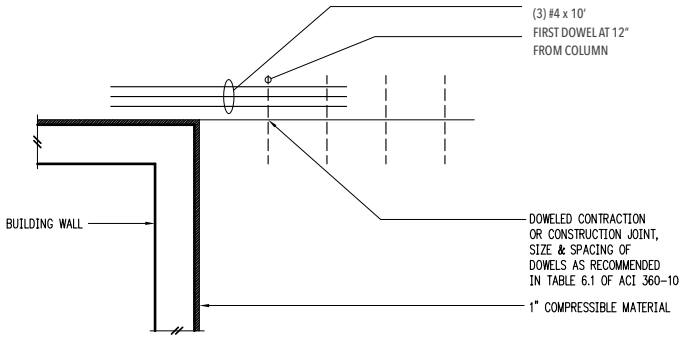


Perpendicular Corner Detail

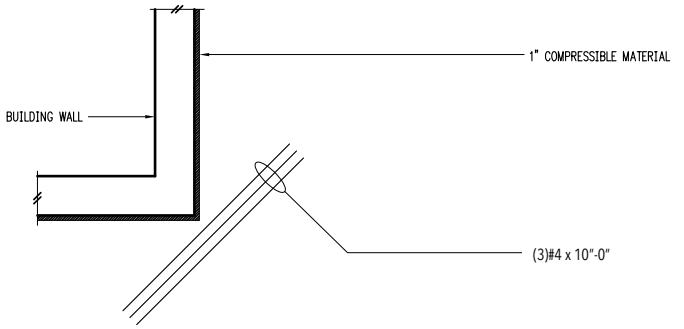


Re-Entrant Corner Detail

File	8	Scale	3/4" = 1'-0"	Title	Iso-Joint H	Boxes	One



Perpendicular Corner Detail



Re-Entrant Corner Detail #2 (Alternate Detail for Re-Entrant Corners Greater than 6')

File	9	Scale	3/4" = 1'-0"	Title	Iso-Joint H	Boxes	One

5. MIX DESIGN

The Mix shall have a well-graded combined aggregate blend to maximize workability and minimize shrinkage, segregation, and bleeding. Also the aggregates should be washed or achieve at least a ≥ 200 on the sand equivalent test to minimize water demand and maximize ITZ bond. Ultimate drying shrinkage should be .04% or less per ASTM C157 measured at 56 days. Cement content should be minimal, between 450-470 lbs per yard. Type 1L cements vary in lime content. Lime has not gone through the clinker process therefore the more lime content the less early and ultimate strength gain will be realized. More cement will need to be used as lime content increases to achieve a desired compressive strength. With the lower paste content more aggregates need to be added to make up yield, this benefits the slab by lowering shrinkage potential and increases aggregate interlock. The carbon footprint is also reduced. Depending on design strength and cement type, more cement may need to be added. Testing ahead of the scheduled placement with sufficient notice can establish whether a higher cement content can achieve the shrinkage requirements and design strength requirements. Aggregates vary region to region and play a major role in shrinkage and workability. With the addition of E5 Internal Cure and Liquid Fly Ash, the mix will perform optimally as nano silica is the most reliable and consistent universal chemical in concrete, and is necessary to create durable and sustainable concrete, regardless of cement chemistry. Adjustments should be made by the ready mix supplier to compensate for the non uniform dispersion of the limestone from the cement and the remainder of the aggregate, if inconsistencies are found. Studies have found that the limestone can separate from the cement during transit to the plant. Colloidal nano silica is an excellent dispersion material, it increases the homogeneity and even dispersion of all ingredients within the concrete mix design.

PSI is not the only metric to determine durable or sustainable concrete. Density, hardness, and PSI must be considered as a whole. A dense and hard concrete with lower PSI will outperform “high performance” higher PSI mixes that lack density and hardness when it comes to durability and optimization for polishing. Colloidal nano silica particularly benefits slabs at the surface, regardless of cement type, since it increases the surface density in the top 1” of the slab surface. This is because as heavier aggregates settle due to gravity while concrete is in it’s plastic state, the lighter paste and water (which is controlled by nano silica) naturally rises towards the top. More CSH is formed at the top 1” of an E5 enhanced slab for this reason. OPC based slabs suffer from a weaker and more porous top 3/4” to 1” of the slab surface, because the mix water isn’t controlled by nano silica. Regarding surface hardness, no water or evaporation retarders should be added whatsoever to the slab surface. If a finishing aid is needed to aid lubricity, E5 Miracle Aid can be used but only if the slab will not receive E5 Catalyst. The below mix design is a good starting point for a slab on grade with a design strength of 3000 psi. The design team should not be hyper focused on the 28 day strength requirement, as this hyper focus is largely responsible for lower ultimate strength and durability we commonly see today in standard OPC mix designs. No fly-ash or other unreliable waste

product SCM's should be used, only E5 Liquid Fly Ash. E5 LFA has been found to be the most efficient SCM ever tested, and does not compete with cement for water unlike waste product dry add SCM's. E5 LFA also enhances the ITZ bond resulting in enhanced flexural strength, (generally we see 30% increase) which means the concrete bends more before it breaks.

E5® Liquid Fly Ash® can replace up to 15% of cement, depending on the type of cement, and can replace or reduce the use of other supplementary cementitious materials (SCMs), such as fly ash, silica fume, micro-silica and slag. According to a study conducted by Dr. Jason Weiss in 2022, LFA is the most efficient SCM when compared to all other SCMs in the market. Additionally, LFA is readily available and consistently manufactured, providing a highly reliable source of cementitious material when other SCMs are suffering from supply shortages, quality inconsistencies and price fluctuations.E5® Liquid Fly Ash® causes no air entrainment issues and presents no silo storage requirements, as is the case with traditional fly ash.

Additionally, **E5® Liquid Fly Ash®** promotes particle packing within the porous structure of concrete, resulting in molecular level densification of the concrete matrix and surface and, therefore, reduced permeability.

To ensure all requirements are met, a responsible representative from Sustainable Structures LLC needs to review the mix design prior to placement.

GROUP	MATERIAL	SUPPLIER	SPG	MASS LBS	VOL FT3
Cement	Blended 1L	TBD	3.15	470	3.059
Aggregate	Coarse Agg 3/4"	TBD	2.72	1620	9.547
Aggregate	Coarse Agg 3/8"	TBD	2.68	330	1.971
Aggregate	Fine Agg Class 2 Sand	TBD	2.61	1329	8.163
Water	Potable H20	Well or City	1	262	4.199
Admixture	HFLOW 3oz/ yard	E5	1.05	0.616	0.00940
Admixture	E5 Internal Cure 18oz/yard	E5	1.10	1.173	0.01880
Admixture	E5 LFA 36oz/ yard	E5	1.10	2.364	0.03760
Fiber	AC60 microfiber 2/3 lb/yard	ICF			
Air	Air				0.405

6. BATCHING

The Ready Mix Provider can either add the E5 products in the central ready mix drum via dispenser, add it to the drum of the transit mixer via bucket or portable dispenser in the case of dry batch, or add it to the drum of the transit mixer via bucket or portable dispenser in the case of a central mix plant not having dispensing equipment set up yet. In any case, the E5 nano silica needs to be added to the load after all the other ingredients have been added and wetted. E5 HFLOW can be added any time as desired, but cannot be mixed or touch Internal Cure and Liquid Fly Ash. After aggregates, water, cement is added and thoroughly mixed, LFA should be added first and then Internal Cure. The two products cannot be combined and added simultaneously. Care should be taken to pre wet the hopper and fins with water prior to adding E5 via bucket, so that the E5 doesn't make unmixed materials stick to the metal. Ideally E5 will be added at the batch plant. Internal Cure should always be added last.

E5 can be added on site but this may result in slump loss from the plant to the site. In any case, a qualified representative from Sustainable Structures LLC should be present or should have thoroughly trained the Ready Mix Provider so that dosing is done per E5 manufacturer recommendations. E5 has to be added after all other ingredients have been thoroughly wetted, this is crucial. Water can be added on site as necessary to maintain slump. All loads should be

from the same batch plant and have the same cement and aggregate source for the entire slab placement.

7. PUMPING OR PLACING

E5 enhanced concrete can be pumped or placed conventionally per ACI standards. The pump operator may notice dramatically decreased pump pressures. During placement the E5 concrete will tend to segregate less, as it is a well known function of CNS to “hold” various ingredients together, including holding water in the mix. CNS will disperse all ingredients in the mix more efficiently and make all reactions in the concrete more effective, eliminating the need for a VMA. The concrete will have very similar set time(s) to standard OPC, even though the mix stays wetter longer, it is still getting hard at a similar rate, so placers should make every effort to get the concrete to “it’s shape” as soon as possible.

8. FINISHING

E5 enhanced concrete for the most part is finished conventionally. Less labor is needed in general since the surface doesn’t dry out as fast. Finishers will be able to work up cream much later during the set time window compared to standard OPC. Care should be taken to get the concrete to “it’s shape” as soon as possible, since set times are not much different than standard OPC. Also, this means that if there is a low spot or surface void that needs to be filled during finishing, it needs to be filled immediately after screeding and before bull floating. Filling in areas after this step may result in discoloration and different aggregate exposure. After bull floating it is recommended to use a laser calibrated highway straightedge. No external curing is required with E5 Internal Cured slabs. These slabs can be finished flatter in

general, because the finisher can wait longer before putting heavy ride on finishing machines on the surface. The finisher can wait for the slab to set up from the bottom up, so it can support the weight of the machine without causing hills and valleys in the surface. E5 slab surfaces stay moist for much longer than standard OPC slabs, yet the set time is very similar. This results in finishers being able to finish a slab with fewer passes and less labor. No water or evaporation retarders (evaporation retarders are 95% water) should be added whatsoever to the slab surface. If a finishing aid is needed to aid lubricity, E5 Miracle Aid can be used but only if the slab will not receive E5 Catalyst. To make the slabs as flat as possible, the slab should be “broken open” after the waiting period with a ride on power trowel with it’s pans still on when the surface is firm enough to support the weight of the machine. The best way to tell this is to step on the surface. Footprints should barely be perceived, no more than 1/8” indentation. The advantage of using E5 is the finishers can wait longer before doing this, resulting in a flatter slab finished with less effort, stress, and fewer passes. Reference ACI 302.1R-15. Any of the classes of floors mentioned in table 4.1 are polishable. But the more closely finishing techniques resemble those for a Class 9 Superflat floor (section 10.9 page 47-48) the more consistent the aggregate exposure will be, and the more consistent the cream polish will be. The Floor Flatness required for an optimized slab is 55. ACI Advanced Concrete Flatwork Finisher certification is recommended, and/or 5 years of interior flatwork finishing experience needed to be approved for finishing E5 Optimized Slabs. They should be familiar with how the E5 internally cured concrete extends the finishing window, and with the

requirements of making a most consistent “canvas” to be polished. This step is even more critical than the polishing step to produce a consistent outcome.

As the concrete surface hardens another power trowel can follow behind with steel blades or combination blades. Overlapping passes and at right angles. Every effort should be made to get the power trowel as close as possible to the slab edge and penetrations, to create the flattest slab possible for polishing. (If a slab has several penetrations and/or a lot of edge work that needs to be done by hand, it is not a good candidate for E5 Catalyst as this will make the concrete too hard too soon for hand grinding to be able to break cream open and provide a consistent looking polish - these slabs should use Internal Cure+LFA only). If the slab is to receive E5 Catalyst it should be applied by hand sprayer very lightly at 1000 SF/gallon just prior to the final finishing pass.

9. POLISHING

If all these steps have been followed so far the E5 enhanced concrete slab will respond to polishing brilliantly. It will be flatter with less cracking and no curling. Polishing can commence in 1-2 days if Catalyst is used. If Catalyst was used we strongly recommend performing the first step of grinding wet. If Catalyst wasn’t used Polishing can begin in 7 days. Wet grinding is still recommended as the best way to start the process. E5 Cutting Compound can be used in the water tank and will aid lubricity, extend diamond life, and act as a micro grout filling scratch marks during the wet grinding/honing steps. Cutting compound can be extended with water 1:1. If there is pitting in the floor (entrapped air voids are common), pit grout such as Metzger McGuire SRG should be used prior to the 50 grit step for both Salt and Pepper and Full Aggregate exposures. When the polisher is ready to switch to dry grinding, the slab can be cleaned with auto scrubber, slurry vacuum, pressure washer, or combination of any of the three to remove slurry. Slurry should be disposed of responsibly. Floor must be completely dry prior to pit grouting. No densifier is needed after the 200 or 400 resin step as you do when polishing OPC concrete slabs. E5 slabs are already densified and can be polished up to 800 or higher without topical densification. After the 800 resin step the slab should be vacuumed and micro fibered until dust free. Afterwards 2-3 applications of E5 Protect followed by 1500 or 3000 grit diamond impregnated pad burnishing should be done to prevent stains at the surface. A final pass with microfiber should be done to remove any dust swirls. Then the owner should educated on slab maintenance such as using mats to keep feet clean prior to walking on the slab as well as using no other product to clean other than E5 Daily Restore. E5 manufacturer guidelines should be followed in the data sheets provided for Internal Cure, Liquid Fly Ash, HFlow, Miracle Aid, Catalyst, Cutting Compound, Protect, and Daily Restore.

SUGGESTED POLISHING STEPS		
Cream	**Salt and Pepper**	**Full Aggregate**
200 COPPER BOND (WET)	70 GRIT LAVINA SUPERTHICK METALS (WET)	18/20 METALS (WET)
400 PHENOLIC RESINS	50 GRIT CPS AQUAS OR EQUIVALENT	30 METALS (WET)
800 PHENOLIC RESINS	100 GRIT CPS AQUAS OR EQUIVALENT	70 GRIT LAVINA SUPERTHICK METALS (WET)
E5 PROTECT + 1500 BURNISH 2X	200 PHENOLIC RESINS	50 GRIT CPS AQUAS OR EQUIVALENT
	400 PHENOLIC RESINS	100 GRIT CPS AQUAS OR EQUIVALENT
	800 PHENOLIC RESINS	200 PHENOLIC RESINS
	E5 PROTECT + 1500 BURNISH 2X	400 PHENOLIC RESINS
		800 PHENOLIC RESINS
		E5 PROTECT + 1500 BURNISH 2X

800 grit cream polish. Photo taken right before floor protection. Jointless Optimized Slab in Olympia, WA

9. TEMPORARY FLOOR PROTECTION

If floor protection is desired either after finishing and prior to polishing or after polishing and prior to occupancy, there are several things to consider.

1) What kind of environment will the slab be in during the protection period?
2) Can we take simple measures to protect the slab by being careful instead of spending money on temporary floor protection?

There are several options available for floor protection. In the past, plastic has been placed over the concrete followed by sheets of plywood. If exposed, rain can leech tannins from the plywood and this contaminated water can stain the concrete through punctures in the plastic. Better options are now available such as simply using E5+Catalyst to dramatically enhance the wear resistance and close the surface pores. This gives the concrete itself a built in resistance to damage during construction. There are cardboard options like Ramboard™, and they even make “Pro Sheets” which are 48”x96” sheets and 40% thicker than traditional Ramboard™ rolls. Other options include glue down systems from GoldiLox™, and Skudo™, which both have various offerings depending on client needs and budget. Care must be taken to use adhesive that do not contain solvents that will mark the floor, and manufacturer’s installation instructions should be followed. Both the GoldiLox™ and Skudo™ commercial floor protection systems must be disposed of in general garbage however, they cannot be recycled. Whereas the less expensive Ramboard™ option can be reused and recycled. Ramboard™ is more easily damaged and must be repaired or replaced as needed during the protection period. Care must be taken to not adhere any tape directly to the concrete floor. Tape contains solvents that can stain the floor. Ramboard™, for example, sells Seam Tape that is meant for adhering the seams of Ramboard™ together, it is not meant to be adhered to any finished surface.

After floor protection is removed, it is a good idea to burnish the entire floor once more prior to occupancy.

Rory Bosma/CEO

SUSTAINABLE Structures

E5® Incorporated

ADVANCING CONCRETE TO A FLATTER, STRONGER, AND FASTER POLISHING FUTURE.

E5® Nano Silica admixtures transform the polishing process by creating a denser, more uniform surface that enhances flatness and consistency. By strengthening the paste at the surface, E5® locks in aggregate for even exposure, minimizing roll-outs, pinholes, and costly rework. Its advanced chemistry also helps overcome the challenges of today's 1L cements delivering floors that are stronger, smoother, and ready to shine.

ADVANCED NANO-TECHNOLOGY

Molecular level reaction forms additional C-S-H, increasing surface density and uniformity for a stronger, flatter finish.

INTERNAL CURING

Moisture is retained within the concrete, reducing shrinkage while eliminating the need for traditional curing compounds.

ACCELERATED POLISHING

Denser, more refined surfaces polish faster with consistent aggregate exposure reducing labor while delivering superior gloss and clarity.

> "The surface finishes flatter with E5®, giving me consistent aggregate exposure and a tighter matrix that holds aggregates in place making polishing faster, cleaner, and more predictable."
>
> Tim Logan | Ultimate Flooring Concepts, Texas

ADMIXTURES FOR MEASURABLE OUTCOMES

- E5® Internal Cure® eliminates topical curing compounds and wet curing
- E5® Liquid Fly Ash® engineered to exact standards to deliver predictable results every mix

Build Better. Build Smarter. Build with E5.

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PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Polished concrete finish on cast-in-place E5 Internally Cured Concrete work.

1.2 RELATED REQUIREMENTS

A. 03 3000 - Cast-in-Place Concrete.

B. 03 3513 - Concrete Floor and Architectural CIP Finishing.

1.3 REFERENCE STANDARDS

A. ACI 301 - Specifications for Structural Concrete; 2020.

B. ACI 302_1R-15.

1.4 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene one month before slab placement in accordance with Section 01 3000 - Administrative Requirements.

Review preparation and installation procedures, and coordinating and scheduling required with related work.

1.5 SUBMITTALS

A. Qualification Data: For installer.

B. Submit concrete mix design including cement type, aggregate gradations, admixtures, and E5 Internally Cured Concrete specifications. Concrete Mix design submittal needs to be reviewed by Sustainable Structures IMR for E5 for mix design optimization, Engineer, and Architect.

C. LEED Submittals: For components of this section submit the following in compliance with Section 01 3515 - LEED Certification Procedures.

IEQ 4.1: For adhesives and sealants, documentation including printed statement of VOC content.

IEQ 4.2: For paints and coatings, documentation printed statement of VOC content.

1.6 QUALITY ASSURANCE

A. Installer's Qualifications:

Sustainable Structures certified finisher.

Sustainable Structures certified polished concrete installer.

B. Perform Work in accordance with ACI 301-20 and ACI 302_1R-15.

Maintain one copy of each document on project site.

1.7 MOCKUP

A. Construct mockup comprised of one horizontal field sample panel, 10 feet long by 10 feet wide, with full aggregate size range represented. The mockup concrete must be finished with the same crew and machines, be reinforced as the work, and be placed from the same ready mix plant that will supply the job - 4 yards minimum.

Provide lighting equivalent to finished facility for polishing and examination.

B. Locate where directed.

C. Mockup may remain as part of the Work.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.

B. Storage:

Store materials in clean, dry area indoors in accordance with manufacturer's instructions.

Keep materials between 41F - 90F.

C. Handling: Protect materials during handling and application to prevent contamination or damage.

PART 2 - PRODUCTS

2.1 DESCRIPTION

A. Polished Concrete Floor: Dry or wet grinding and polishing with various size grit metal-bonded and resin-bonded diamonds and application of E5 Cutting Compound and E5 Protect by a Sustainable Structures (IMR for E5) certified polished concrete installer.

2.2 MANUFACTURERS

A. Specification is based on Diamond-D Polished Concrete by Lundeen Simonson Inc.

Comparable products are also acceptable based on completed work reviewed by Architect and Owner. See Section 01 6000 - Product Requirements for submittal requirements.

Substitutions for products by manufacturers other than those listed above: See Section 01 6000 - Product Requirements.

2.3 MATERIALS

A. Concrete Cutting Compound:

E5 Cutting Compound

B. Concrete Pit Grout:

Metzger McGuire SRG

C. Concrete Burnishable Sealer:

E5 Protect

D. Concrete Cleaner:

E5 Daily Restore

Substitutions: See Section 01 6000 - Product Requirements.

2.4 CONCRETE MIX

A. Concrete mix design to include E5 Internally Cured Concrete specifications as outlined in Section 03 3000.

2.5 EQUIPMENT TO BE USED FOR INSTALLATION

A. Floor Grinder: Type: Multi-orbital, planetary-action, opposing-rotational, diamond-headed floor grinder.

B. Vacuum System: Ermator (or equivalent) model as determined by installer to perform required dust extraction during grinding and polishing of concrete floor.

C. Diamond Tooling for Initial Grinding and Preparing Floor for Polishing:

70-grit metal-bonded diamonds (or equivalent).

D. Diamond Tooling for Polishing Concrete:

800-grit resin-bonded diamonds (or equivalent).

2.6 ACCESSORIES

A. All accessory materials required by the manufacturer for a warrantable installation of the installed products in a manner that meets the Performance and Design Criteria.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine floor to receive polished concrete floor finish.

B. Notify Architect of conditions that would adversely affect installation or subsequent use.

C. Verify the Following for Concrete Floors:

Floor Finish:

a. Slabs and flatwork shall be placed and finished monolithically.

b. Strike off and screed slabs to true, plane surfaces at required elevations.

c. Thoroughly compact concrete with vibrators, floats, and tampers to force coarse aggregate below the surface.

d. Power trowel with no hand finishing. No “fuzz” finish or texture should remain on the surface. The surface should be uniform, dense, and tightly steel troweled.

e. Surface should not be burned or burnished due to excessive troweling.

f. Imprints are not acceptable.

g. Adding water or evaporation retarders to the surface is not acceptable.

h. E5 Miracle Aid finishing aid may be used to aid lubricity during finish as required by finisher.

i. E5 Catalyst cannot be applied if Miracle Aid is used, and vise versa.

Floor and Joints:

a. Free of debris and excessive dirt, dust, clay, and mud.

b. Dry.

Floor Surface Profile:

a. Floor Flatness Number (FF): 55.

Concrete Curing: Minimum 7 days with E5 Internal Curing, 1-2 days if E5 Internal Cure+Catalyst is used. If average temperatures are below 60F, 14 days may be needed.

Concrete Adjacent to Floor Penetrations: Troweled flat and level with surrounding concrete.

Concrete Adjacent to Drains, clean-outs, etc. : Finish level to the top of the structure.

3.2 PREPARATION

A. Protection: Protect surrounding areas and adjacent surfaces from the following:

Minimal accumulation of dust from grinding and polishing.

Contact with overspray of E5 Protect Sealer, Miracle Aid, Cutting Compound, or Catalyst.

B. Surface Preparation: Prepare surfaces in accordance with installer's instructions.

C. Clean Surfaces: Remove dirt, dust, debris, oil, grease, curing agents, bond breakers, paint, coatings, and other surface contaminants which could adversely affect installation of polished concrete floor system.

3.3 INSTALLATION

A. Install polished concrete floor system in accordance with installer's instructions at locations indicated on the Drawings.

B. Polished Concrete Floor System:

Preparation Step:

a. Open-up concrete with 70 grit metal bonded diamonds wet grinding with E5 Cutting Compound.

Apply Pit Grout to entire floor if desired.

Remove residue of pit grout dried on floor surface by grinding with 80-grit metal-bonded diamonds or 50 grit ceramic/resin/copper bond hybrids.

Floor Closure Polishing:

a. Remove 80-grit metal-bonded diamond scratches (or 50 grit hybrids) by grinding with 100-grit hybrid diamonds.

b. Remove 100-grit hybrid bonded diamond scratches by grinding with 200-grit hybrid diamonds.

c. Remove 200 grit diamond scratches by grinding with 400-grit resin bonded diamonds.

d. Remove 400 grit diamond scratches by grinding with 800-grit resin bonded diamonds.

e. Apply E5 Protect Sealer.

f. High speed burnish protective sealer with diamond impregnated pad.

3.4 FIELD QUALITY CONTROL

A. Inspect completed polished floor system with Owner, Consultant, Contractor, Architect, and Installer.

B. Review procedures with Architect to correct unacceptable areas of completed polished concrete floor system.

3.5 PROTECTION

A. Protect completed polished concrete floor system from damage until Substantial Completion.

1. Do not allow vehicle and pedestrian traffic on unprotected floor.

2. Do not allow construction materials, equipment, and tools on unprotected floor.

3. Immediately remove mortar splatter, spilled liquids, oil, grease, paint, coatings, and other surface contaminants which could adversely affect completed polished concrete floor system.

4. Repair damaged areas of completed polished concrete floor system to the satisfaction of the Architect.

3.6 CLEANING

A. Dispose of all waster material in accordance with project waste management plan.

B. Cleanup of spills or general cleaning during construction should be with E5 Daily Restore cleaner per manufacturer recommendations.

C. Cleanup of spills or general cleaning throughout the life of the slab should be done with E5 Daily Restore cleaner per manufacturer recommendations.

3.7 SCHEDULE

A. (CONC-_): Aggregate Exposure: Mottled Salt and Pepper course aggregate exposure.

1. Locations: As indicated on A2.50.

END OF SECTION