BUILDING TRUST

PRODUCT DATA SHEET

# Sika AnchorFix®-2020

High performance, professional anchoring adhesive

## PRODUCT DESCRIPTION

Sika AnchorFix®-2020 is a proprietary, two-component, thixotropic, fast curing, anchoring adhesive for anchoring threaded rods and reinforcing bars in both uncracked and cracked concrete. For use in cold to moderate climate conditions.

## USES

Sika AnchorFix®-2020 may only be used by experienced professionals.

Fast curing adhesive for anchors

**Structural work**

- Steel reinforcement dowels in new construction and refurbishment projects
- Steel threaded rods
- Threaded bolts and other special fastening hardware (e.g. screens as supplied by others)

**Metalwork, other**

- Handrails, balustrades and supports
- Railing baseplates
- Window and door frames

**Substrates**

- Concrete (uncracked and cracked)
- Solid masonry
- Wood
- Hard natural stone
- Solid bedrock

## CHARACTERISTICS / ADVANTAGES

- Fast curing - cures down to 14 °F (-10 °C) when material is preconditioned to 41 °F (5 °C).
- Standard, high quality caulk guns can be used
- High load capacity
- Good adhesion to substrate
- Suitable for cracked concrete
- Seismic / Wind Load tested
- Non-sagging consistency
- Sets up in dry or damp anchor holes.
- Styrene-free
- Low emissions
- Low wastage

## APPROVALS / STANDARDS

- **IAPMO UES Evaluation Report Number 601 (ER-601) - current report found at IAPMO's websites: https://www.iapmo.org and https://www.uniform-es.org**
- Tested in accordance with ICC ES AC308, the Acceptance Criteria for "Post-Installed Adhesive Anchors in Concrete Elements" (revised March 2018) for use in uncracked and cracked concrete
- Compliant with 2018 International Building Code (IBC) / 2018 International Residential Code (IRC)
- Compliant with ACI 318-14, ACI 318-11 and ACI 355.4
- ANSI/NSF 61 compliant (pending publication of final certification)

## PRODUCT INFORMATION

| | | | |
|---|---|---|---|
| **Packaging** | 10.1 fluid ounce (300 ml) standard cartridge | | 12 cartridges with one static mixer each per carton<br>75 cartons per pallet |
| **Color** | Component 'A' | Beige | |
| | Component 'B' | Black | |
| | 'A' + 'B' mixed | Gray (uniformly blended) | |
| **Shelf Life** | 12 months from date of production if stored properly in original, unopened and undamaged, sealed packaging. | | |
| **Storage Conditions** | Store in cool, dry, well ventilated conditions, out of direct sunlight at 40 - 86 °F (4 - 30 °C). | | |
| **Density** | Component 'A' 14.19 lb/gal (1.70 g/cm³)<br>Component 'B' 12.94 lb/gal (1.55 g/cm³)<br>'A' + 'B' mixed 14.07 lb/gal (1.69 g/cm³) | | |

## TECHNICAL INFORMATION

| | | | |
|---|---|---|---|
| **Compressive Strength** | 24 hours | 10,600 psi (73.1 MPa) | (ASTM D695) 73 °F (23 °C), 50% R.H. |
| | 7 days | 11,300 psi (77.9 MPa) | |
| **Flexural Strength** | 24 hours | 4,060 psi (28 MPa) | (ASTM D790) 73 °F (23 °C), 50% R.H. |
| **Tensile Strength** | 24 hours | 1,740 psi (12 MPa) | (ASTM D638) 73 °F (23 °C), 50% R.H. |
| | 7 days | 2,030 psi (14 MPa) | |
| **Tensile Modulus of Elasticity** | 24 hours | 5.42 x $10^5$ psi (3,737 MPa) | (ASTM D638) 73 °F (23 °C), 50% R.H. |
| | 7 days | 5.54 x $10^5$ psi (3,820 MPa) | |
| **Elongation at Break** | 24 hours | 6.2% | (ASTM D638) 73 °F (23 °C), 50% R.H. |
| | 7 days | 7.1% | |
| **Heat Deflection Temperature** | 7 days | 169 °F (76 °C) | (ASTM D648) |
| **Service Temperature** | Long term | -40 °F (-40 °C) minimum / 122 °F (50 °C) maximum | (ETAG 001, Part 5) |
| | Short term (1 - 2 hours) | 176 °F (80 °C) maximum | |

**Design Considerations**

**For additional information regarding specific anchor recommendations and performance (e.g. Diameters, Anchor Hole Dimensions, Embedment Depths, Allowable Load Values, Design Calculations, Special Conditions, etc.), please consult the most current IAPMO UES Evaluation Report Number 601 (ER-601) found at IAPMO's websites:** https://www.iapmo.org **and/or** https://www.uniform-es.org
**For free downloadable Sika AnchorFix Calculation software, please visit Sika Corporation's website:** https://usa.sika.com
**Consult local building codes and governing project policies before considering the use of this product in overhead adhesive anchoring applications.**
**Suitability for use is determined by the qualified design professional in charge of the actual product installation.**

## APPLICATION INFORMATION

| | |
|---|---|
| **Mixing Ratio** | Component 'A' to Component 'B' = 10:1 by volume |
| **Sag Flow** | Non-sagging consistency |
| **Product Temperature** | 41 °F (5 °C) minimum / 86 °F (30 °C) maximum |
| **Ambient Air Temperature** | 14 °F (-10 °C) minimum / 95 °F (35 °C) maximum |
| **Substrate Temperature** | 14 °F (-10 °C) minimum / 95 °F (35 °C) maximum |
| **Cure Time** | Minimum cartridge temperature = 41 °F (5 °C). Condition prior to use. |

| Temperature | Gel time[1] - $T_{gel}$ | Curing time[2] - $T_{cur}$ |
|---|---|---|
| 86 - 95 °F (30 - 35 °C) | 2 minutes | 30 minutes |
| 77 - 86 °F (25 - 30 °C) | 4 minutes | 40 minutes |
| 68 - 77 °F (20 - 25 °C) | 5 minutes | 50 minutes |
| 59 - 68 °F (15 - 20 °C) | 6 minutes | 75 minutes |
| 50 - 59 °F (10 - 15 °C) | 8 minutes | 85 minutes |
| 41 - 50 °F (5 - 10 °C) | 10 minutes | 2 hours, 25 minutes |
| 14 - 41 °F (-10 - 5 °C) | 15 minutes | 12 hours |

[1]Gel time refers to highest temperature in the range
[2]Cure time refers to the lowest temperature in the range
Refer to IAPMO UES Evaluation Report #601 (ER-601) at **https://www.iapmo.org** for the most up to date information regarding cure times and cartridge conditioning of Sika AnchorFix®-2020.

## APPLICATION INSTRUCTIONS

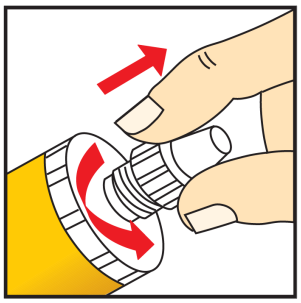
### SUBSTRATE QUALITY

Concrete substrate must be at the required nominal Compressive Strength [i.e. minimum 2,500 psi (17.2 MPa) / maximum 8,500 psi (58.6 MPa)].
Adhesive anchor performance in alternate substrates (e.g. solid masonry, wood, natural stone, bedrock, etc.) must be confirmed by physical field tests following the guidelines of ASTM E488 / ASTM E1512.
The anchor hole must always be clean and free from oil, grease, and all contaminants. Loose dust particles in dry applications and embedded paste in water saturated and/or water filled applications must be mechanically removed from the anchor holes.
Steel threaded rods and rebars must be thoroughly cleaned and dry, free from rust, dirt, cutting oil, grease, dust and any contaminating, foreign substances which could affect adhesion.

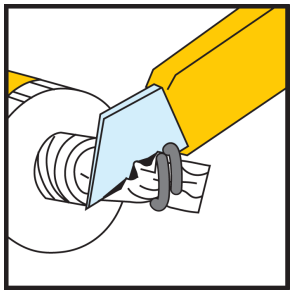
### MIXING

Sika Anchorfix®-2020 two-component, anchoring adhesive is supplied in a "cartridge-in cartridge" package, fitted with a static mixer and dispensed with a standard, good quality caulk gun.

**Getting the cartridge ready: 10.1 fl. oz. (300 ml)**

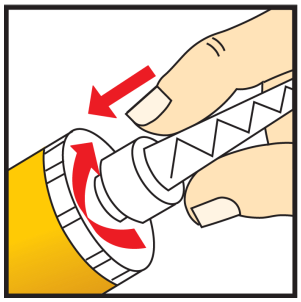


1. Remove twist cap from the top of the cartridge.

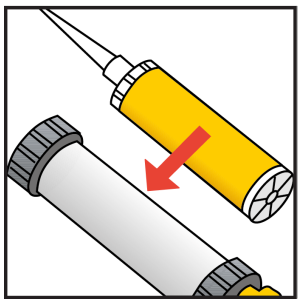


2. Cut the plastic film open below the metal retaining clip with a utility knife.

Ensure that both components within the plastic film are free to flow prior to inserting cartridge into a standard, high quality caulking gun. Component 'A' is Beige in color. Component 'B' is Black in color.



3. Attach the static mixer.

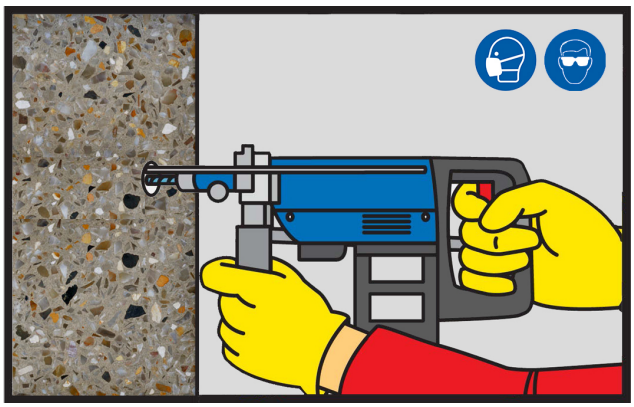


4. Place the cartridge into caulk gun when ready to start installation.

## APPLICATION METHOD / TOOLS

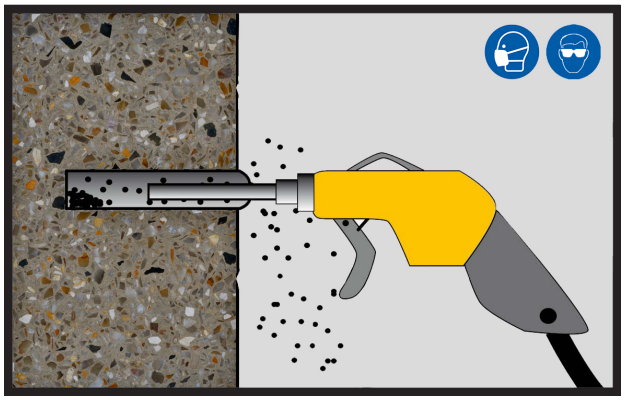
### Adhesive anchors in concrete / solid masonry

1. Drill an anchor hole into an uncracked or cracked [i.e. 20 mils wide or less (0.5 mm)], solid concrete substrate with the recommended diameter, carbide-tipped drill bit to the desired or recommended embedment depth using a typical rotary hammer drill. If a carbide-tipped "core" or diamond "core" bit is used leaving a smooth, polished surface on the inside of the anchor hole when the core is removed, then surfaces should be scoured and/or profiled with a smaller diameter carbide tipped drill bit.

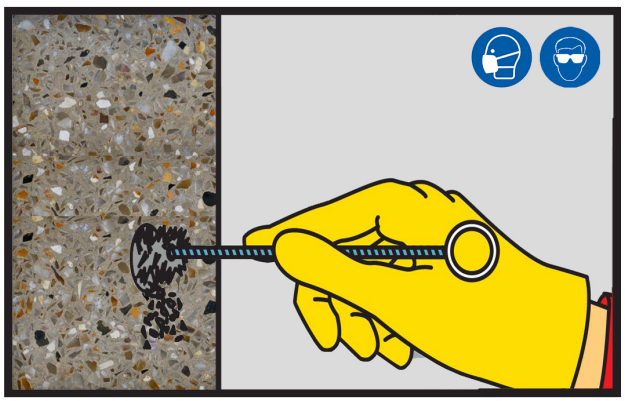


Ideally, the inside surfaces of an anchor hole need to be as clean, sound, dust-free and dry as possible prior to injection of an anchoring adhesive. A clean, damp surface can be tolerated, but an anchor hole should not contain standing water or have droplets of moisture clinging to the surfaces. For performance reduction factors and design guidelines when anchoring into water saturated or water filled anchor holes, please consult the current IAPMO UES Evaluation Report 601 (ER-601).

2. From the base or bottom of the anchor hole, blow clean with two significant blasts of oil-free compressed air. Each blast should be a minimum two seconds each. Compressed air must be clean and dry with a minimum pressure 90 psi (6 bar).

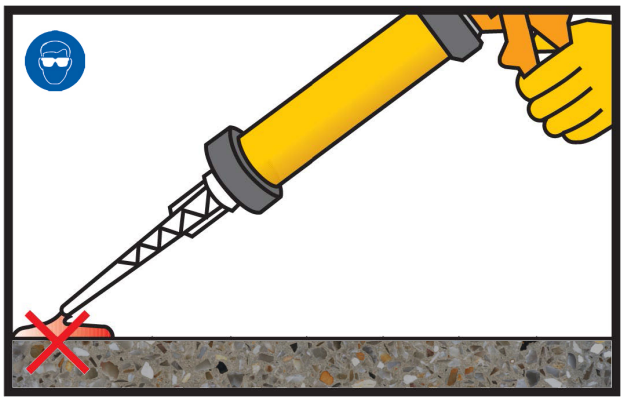


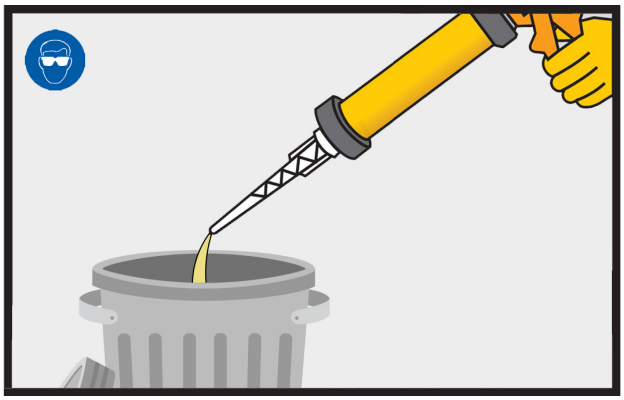
3. From the base or bottom of the anchor hole, brush clean twice with either a wire or nylon brush of appropriate size. There should be positive interaction between the bristles of the brush and the sides of the drilled anchor hole.



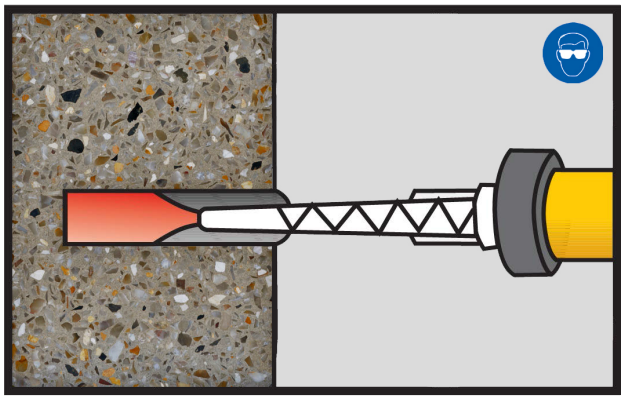
**Repeat the cleaning procedure before proceeding to the next step. In other words, repeat steps 2 and 3 and then step 2 again before moving on to step 4.**

4. Begin dispensing the cartridge's contents through the static mixer. Prior to dispensing into the anchor hole the initial portion of material that exits the end of the static mixer, typically the first two squeezes, are discarded. **VERY IMPORTANT!** Visually verify that both components are flowing through the static mixing nozzle and mixed adhesive presents a uniform, consistent Gray appearance with no streaking before dispensing into the prepared anchor hole. Failure to verify a uniform, consistent Gray appearance may result in an adhesive anchor installation that may not cure and perform properly. **Do not discard waste material on substrate.**

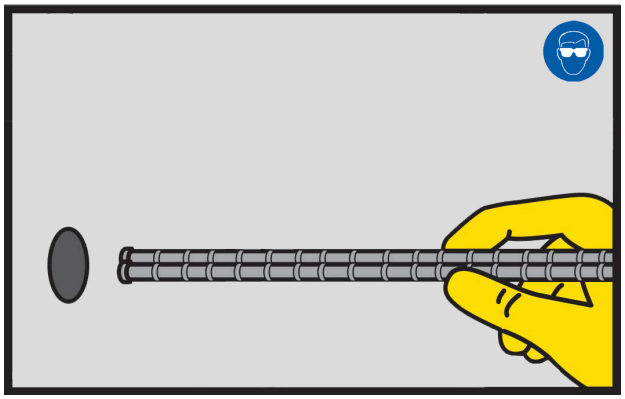




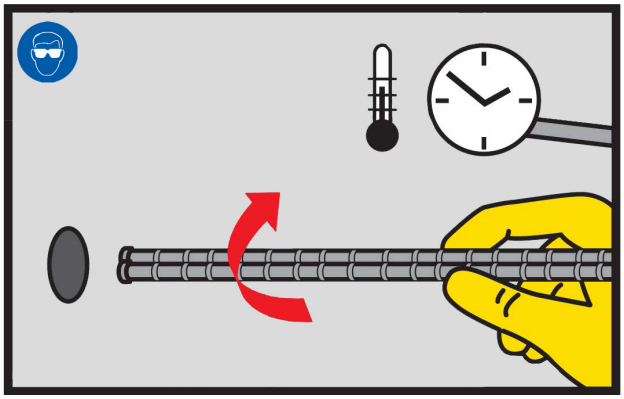
5. Dispense mixed adhesive beginning at the base or bottom of the anchor hole. Steadily withdraw the tip of the static mixer while dispensing, keeping the tip in the adhesive to reduce and/or eliminate air entrapment. Dispense until anchor hole is half to two thirds (1/2 to 2/3) of the way full. Stop dispensing. Release trigger pressure from caulk gun. Scrape tip of static mixer along inside walls of anchor hole to clean tip of excess adhesive while removing.



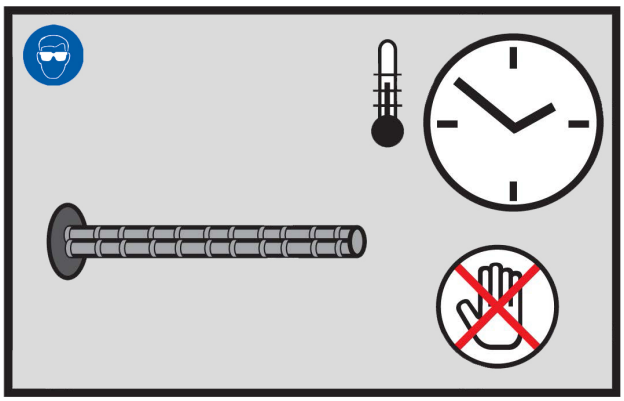
6. Insert clean, contaminant-free, dry, steel threaded rod or steel reinforcing bar for anchor installation.



7. Twist hardware while pressing into adhesive-filled anchor hole to ensure thorough wetting of the threads or deformations and set to full embedment depth. Quickly adjust and position hardware to final location prior to published Gel Time. During insertion of anchor hardware (i.e. steel threaded rod or steel reinforcing bar) uncured anchoring adhesive will displace from the entrance of the anchor hole. Installer may opt to smooth the uncured, displaced adhesive around the hardware with a putty knife or similar tool to seal the anchor hole from future moisture infiltration. Uncured, displaced adhesive can also be wiped away with a rag or paper towel and discarded. This option is typically taken when a fixture will later be mounted with nut and washer onto a steel threaded rod installation. Although still considered good practice, removal of displaced adhesive typically is not critical or necessary when steel reinforcing bar dowels, that later accept the placement of new concrete, are installed.



8. Based on actual ambient and substrate temperature conditions, allow sufficient Cure Time to elapse, leaving adhesive undisturbed prior to loading the anchor. Do not attach fixture, washer and nut to a steel threaded rod; do not pour concrete against steel reinforcing bar dowels until sufficient Cure Time has elapsed. Displaced adhesive that is allowed to cure can only be removed mechanically (e.g. light handheld hammer strikes to chip away). When attaching a fixture to steel threaded rod, be sure not to overtighten the nut beyond the recommended Maximum Tightening Torque for that diameter anchor to avoid breaking the fresh bond that was created.



### CLEANING OF TOOLS

Uncured adhesive can be removed from tool and other surfaces with an approved solvent (e.g. Acetone, MEK or Xylene). Strictly follow solvent manufacturer's warnings and instructions for use. Cured adhesive can only be removed from surfaces mechanically.

## LIMITATIONS

- Solid masonry, wood, natural stone and solid bedrock properties vary, particularly with regard to strength, composition and porosity. Mock installation(s) in representative sample substrate(s) must be physically tested for tensile performance (i.e. pull-out bond strength or proof load) to determine the suitability of Sika AnchorFix®-2020 before committing to full project application.
- Sika AnchorFix®-2020 is not intended as a cosmetic or decorative material and when anchoring into porous substrates (e.g. natural or reconstituted stone), staining or discoloration may occur. Where this is of concern, it is recommended that a small scale mock up is installed and evaluated before application.
- Store material to above 5 °C (41 °F). For ease of application by manual dispensers, precondition to higher temperatures, for example 23 °C (73 °F) when working at low ambient temperatures. The higher the cartridge temperature, the easier to dispense. Take into consideration reduced Gel Times.
- Minimum age of concrete must be 21 to 28 days, depending on curing and drying conditions.
- Do not thin; solvents will prevent proper cure.
- Standard and quality of dispensing tool will impact ease of extrusion, especially when using a manual, standard, high quality caulk gun. Ensure the mechanical advantage is appropriate, piston is correctly aligned and even pressure is achievable.
- Sika AnchorFix®-2020 must only be applied into anchor holes that are frost-free.
- Not recommended for overhead applications by Sika Corporation. Refer to local building codes and IAPMO UES Evaluation Report #601 (ER-601) at **https://www.iapmo.org** for the most up to date information regarding overhead applications of Sika AnchorFix®-2020.

## BASIS OF PRODUCT DATA

Results may differ based upon statistical variations depending upon mixing methods and equipment, temperature, application methods, test methods, actual site conditions and curing conditions.

## OTHER RESTRICTIONS

See Legal Disclaimer.

## ENVIRONMENTAL, HEALTH AND SAFETY

For further information and advice regarding transportation, handling, storage and disposal of chemical products, user should refer to the actual Safety Data Sheets containing physical, environmental, toxicological and other safety related data. User must read the current actual Safety Data Sheets before using any products. In case of an emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.

## LEGAL DISCLAIMER

- **KEEP CONTAINER TIGHTLY CLOSED**
- **KEEP OUT OF REACH OF CHILDREN**
- **NOT FOR INTERNAL CONSUMPTION**
- **FOR INDUSTRIAL USE ONLY**
- **FOR PROFESSIONAL USE ONLY**

Prior to each use of any product of Sika Corporation, its subsidiaries or affiliates (“SIKA”), the user must always read and follow the warnings and instructions on the product’s most current product label, Product Data Sheet and Safety Data Sheet which are available at usa.sika.com or by calling SIKA’s Technical Service Department at 1-800-933-7452. Nothing contained in any SIKA literature or materials relieves the user of the obligation to read and follow the warnings and instructions for each SIKA product as set forth in the current product label, Product Data Sheet and Safety Data Sheet prior to use of the SIKA product.

SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within the product’s shelf life. User determines suitability of product for intended use and assumes all risks. User’s and/or buyer’s sole remedy shall be limited to the purchase price or replacement of this product exclusive of any labor costs. **NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR**

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