



WELCOME TO
BRISK
ENGINEERING
SERVICES





INTRODUCTION

Brisk Engineering Services established in 2001, is one of the leading service providing companies in the field of construction chemicals applications, such as Diamond Core Cutting, Epoxy Grouting, Cementitious Grouting, Crack Injection, Pressure Grouting, Stitch Core Cutting, Concrete Repair & Re-Strengthening, Floor Saw Concrete Cutting, Wall Saw Concrete Cutting, Wire Saw Concrete Cutting, Waterproofing, Dowel Bar Anchoring, Anchor Installation and various other specialized jobs related to construction activities.

The Karachi based company is providing services across Pakistan. The company enjoys rich experience and is engaged in providing services to the consultants, contractors working on the skyscrapers, sugar mills, textile mills, cement industries, barrages, dams, Fertilizer Plants, Power Plants and Motor ways etc.

BUSINESS AIMS:

- › To Compete with leading engineering services companies in the country.
- › Utilization and development of technology to achieve standards.
- › Continuous improvement of company's human resources.
- › Safety and environmental control awareness
- › Good management governance.

FUTURE AIMS:

- › To become an independent firm in the field of Engineering Services this can handle projects right from the designing to the execution of the projects. .

Brisk Engineering Services shall employ knowledge experience and capabilities to develop and set out guidelines for the betterment of the company in its aim for high quality and standard of services.

MISSION STATEMENT

The Philosophy of Brisk Engineering Services is to provide its appropriate, innovative and affordable professional Engineering Services to their valued customers. We aim for client satisfaction by ensuring that our work is accurate and completed on schedule as well as within the budget.

Our mission is to develop cost-effective solutions to meet the unique present and future requirements of our clients. To accomplish this, we investigate all reasonable options. Such as adoption of new technologies, design customizes Engineering tools and offer excellence in the design and delivery of engineering services.

QUALITY POLICY

QUALITY STANDARDS

Throughout all stages of procurement, design, installation and after sales service, Brisk Engineering Services operates procedures to assure the highest standards of quality. To attain continuous improvement in quality., the company's testing and inspection programs are constantly reviewed.

We are committed to developed and maintain high quality standards by utilizing high tech. equipments, analysis, observations and employing procedures to ensure best quality services

DOWEL ANCHORING / ANCHOR INSTALLATION

Dowel Anchoring & Anchor Installation has become an everyday occurrence of the building construction & industries as well. It may raise initial construction cost but this procedure has been proven to be a secure and safer procedure over the long period of time. Both the two procedures are reliable and are used for different applications.

The invention relates to fixing threaded anchor rods & dowels in concrete, rock and the like. Typically, for producing anchored rod/dowels in concrete surface, a bore hole is made epoxy insert into the hole with dispensing gun & static mixture as per manufacturer's standards and then fix the required anchor/dowel.

The objective of the invention is to increase the bearing capacity and safety level of such anchors/dowel, another advantage in chemical anchoring to achieve maximum strength with shorter depth.



DIAMOND CORE CUTTING

Diamond Core Cutting system is performed by using rotary core cutting machine with a diamond core bit attached in order to create precisely measures holes. Diamond is one of the hardest naturally occurring material in the world, it is ideal for creating openings in a Concrete. Diamond Core Cutting is a precision instrument, creating clean, accurate holes with diameters of between 8mm to more than 1500mm along with depth of 4000mm.

It is a non-percussive technique; therefore structural integrity is maintained during this operation. This method runs water through the driving shaft to ensure that the workspace remains free of dust. It can be operated in either a vertical or horizontal direction depending on the requirements.

Diamond Core Cutting is a cost-effective cutting technique that decreases both time to project completion and labor costs. Other advantages include:

- ▶ No-to-low noise pollution
- ▶ No vibration means no damage to nearby structures
- ▶ An environmentally-friendly, debris-free system
- ▶ Cost-effective





WATER PROOFING


In building construction, waterproofing is a fundamental aspect of creating a building envelope, which is a controlled environment. The roof covering materials, siding, foundations, and all of the various penetrations through these surfaces must be water-resistant as well as waterproof.

Following are the major types of Waterproofing Systems:

- ▶ Cementitious/Crestline Waterproofing
- ▶ Liquid Waterproofing Membrane
- ▶ Bituminous Waterproofing
- ▶ Acrylic Waterproofing System
- ▶ Elastomeric Coating System
- ▶ Bituminous Membrane Waterproofing Method
- ▶ Polyurethane Resin Waterproofing Injection System

A leaky ceiling or wet basement is harmful for RCC Structure. It can lead to structural damages. Dampness will also attract wood rot and termites. Water proofing methods are used to prevent water entering into various sections of building structures like tanks, roof, walls and floor or expansion joints.

WATER PROOFING NECESSARY FOR

- ▶ Water Treatment Plants
 - ▶ Sewage Treatment Plants
 - ▶ Bridges
 - ▶ Dams
 - ▶ Railway & Subway Systems
 - ▶ Marine Cargo Ports & Docks
 - ▶ River Locks/Channels & Concrete Dykes
 - ▶ Parking Structures & Lots
 - ▶ Tunnels
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PROTECTIVE COATINGS

It has been a long-term felt necessity of chemical, textile & pharmaceutical industries, such a coating compound that can offer a promising protection to their plant flooring against intense corrosive & etching caused by various acids, alkalis and such other corrosive chemicals of organic & inorganic origin. To meet this crucial demands of chemical industries.

Reinforced concrete is a composite material. Its structural performance is realized only when concrete and steel act in unison during the service life of the structure. The compressive and tensile loads are carried by concrete and steel respectively. Steel protects concrete from cracking under tensile loads and concrete protects steel from corrosion by providing an alkaline environment around it. So long as this happens, the reinforced concrete structures perform satisfactorily. Even though the concrete can be a very strong material, it is also subject to deterioration. Concrete can be porous so that chemicals can penetrate the pores and attack the paste.

The paste and aggregate can also be worn down by physical impact and abrasion. Water can penetrate concrete, freeze and expand inside it when the temperature drops, and ultimately weaken the concrete from within. In addition, if the concrete has reinforcing steel bar (rebar) to impart additional strength and other properties, the rebar can corrode if moisture, oxygen and chloride ions penetrate the concrete. Corrosion or rebar contributes to the deterioration of concrete.

Various external hostile environmental substances, such as, water, carbon dioxide, oxygen, chlorides, sulfides and biological organisms are transported from the atmosphere into the concrete and attack steel and concrete in different mechanisms causing premature deterioration of reinforced concrete, challenging its durability and resulting in premature failure of the structures. The entry of the harmful agents can be restricted and or avoided by providing the barrier surface coatings on the concrete. Thus conservation of structural integrity can be achieved during service life.





NON-SHRINK GROUTING

Grout is a viscous material that is used to fill the space between two elements for bonding them or to create a water-tight sealing existing structures. Grouts are used in a variety of applications such as repair of cracks, water-stopping in submerged structures such as canals, tunnels, etc., fill seams between tiles, and for stabilizing soil. Here we have briefed about types of grouts used in the repair of cracks. Grout is distinguished by its low viscosity and lack of lime (added to mortar for pliability), additionally, grout is thin so it flows readily into gaps. Grout varieties include tiling grout, flooring grout, resin grout, non-shrink grout, structural grout and thixotropic grout.

CEMENTITIOUS GROUTING

The mixing of Grout with water produces a fluid suspension which can be poured under base plates or into foundation pockets. Setting and hardening are the important processes which affect the performance of cement grout. Moreover, presence of excessive voids would also affect the strength, stiffness & permeability of grout. It is versatile in application of filling voids and gaps in structures.

EPOXY GROUTING

Epoxy grout consists of epoxy resin, epoxy hardener and Fillers/aggregates. In fact, there are various types of resin used in construction industry like epoxy, polyester, polyurethane etc. Though epoxy grout appears to imply the presence of cement material by its name, it does not contain any cement at all. On the other hand, epoxy hardener serves to initiate the hardening process of epoxy grout. It is commonly used for repairing hairline cracks and cavities in concrete structures and can be adopted as primer or bonding agent.





CRACK INJECTION

This method can be used to repair cracks in foundations, basements, beams, columns, slabs, walls and other concrete structures as narrow as 0.5 mm up to 10 mm.

The method generally consists of drilling holes at close intervals along the cracks, installing entry ports, and injecting the epoxy under pressure.

Epoxy injection has been successfully used in the repair of cracks in buildings, bridges, dams, foundations and other types of concrete structures. If the crack is active and it is desired to seal it while allowing continued movement at that location, a Polysulfide /Polyurethane sealant shall be used that allows the crack to function as a joint.

STITCH CORE CUTTING

Stitch core Cutting system is used to form slots and opening through wall and floor where others methods of cutting are not practical or accessible. This method is predominantly used in restricted areas. Stitching is also used extensively in areas with close proximity to “clean or controlled” environments as this method brings the benefit of significantly reduced cutting are far easier to control & contain

Stitch Core Cutting is a common technique used to make non-standard shaped and sized holes, when standard cutting equipment isn't suited for the job. This technique is performed by coring a series of overlapping holes, allowing for one large segment to be removed. Stitch drilling is often the answer when dealing with relatively thick slabs or walls, or when the structural integrity of the purposed opening cannot be compromised.





WALL SAWING

Wall Sawing Using a diamond blade mounted on a track we can cut concrete walls both horizontally and vertically to create accurate openings for a range of applications. wall saws are extremely versatile and their small size and lightweight nature mean they can be used in situations where heavier floor saws are not feasible. Find out more about Wall Sawing Services.

KEY FEATURES OF WALL SAWING

- ▶ Precision cutting up to depths of 1000mm utilizing blades of up to 2200mm diameter
- ▶ Precise remedial works
- ▶ Remote controlled operation for increased safety
- ▶ Range of cutting including angle cutting, inverted cutting, stair cutting and flush cutting
- ▶ Speed & versatility
- ▶ Fume free

FLOOR SAWING

Floor Sawing is ideal for cutting reinforced concrete or asphalt. Using the latest technology our specialist team of concrete cutters can cleanly cut depths of up to 700mm in horizontal surfaces such as runways, roads and pavements.





DIAMOND WIRE SAWING

This technique uses a diamond impregnated wire which is fed through a series of pulleys to form a cut where other methods are not practicable. Diamond Wire Sawing is the perfect technique where there is a need to remove considerable areas of heavily reinforced concrete in complex situations where there is limited access. Examples include a concrete sawing of bridge deck or the removal of columns and beams, where depth and speed of cut are imperative.

KEY FEATURES OF WIRE SAWING

- ▶ Non-percussive, fumeless and quiet
- ▶ Smooth cut face
- ▶ Unlimited cutting depth
- ▶ Horizontal, vertical and angled cutting openings up to 2500mm diameter
- ▶ Flexible and quick
- ▶ Plunge cutting facility which allows blind and rebated openings to be formed
- ▶ Remote controlled operation for increased safety



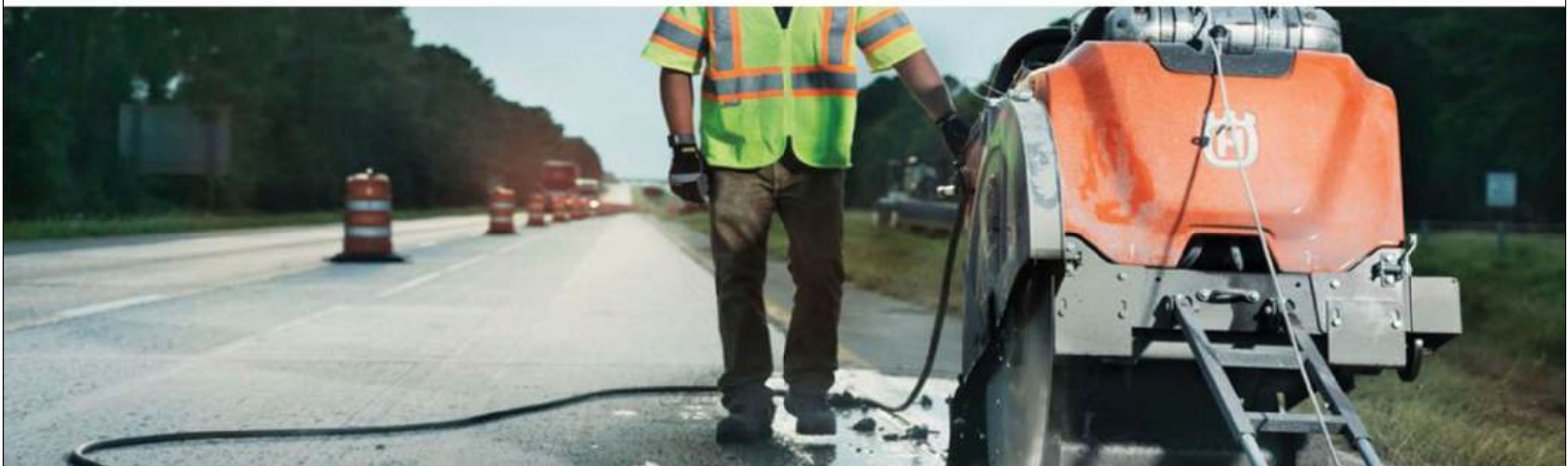


SLAB SAWING

Concrete slab sawing—also known as flat sawing—is a quick and efficient diamond method used for cutting horizontal surfaces such as concrete slabs, floors, bridge decks, and pavement. Slab sawing gained popularity in the concrete cutting industry because it is versatile, practical, and cost efficient. Slab saws are typically powered by gasoline, diesel, electric, or hydraulic engines. Compared to jack hammering, slab sawing is faster, quieter, and less stressful to structural areas. The applications for slab sawing are virtually endless, and the procedure can be performed on a variety of structures, both indoors and outdoors.

COMMON APPLICATIONS FOR SLAB SAWING

- ▶ Cutting reinforced concrete floors
- ▶ Cutting expansion and control joints
- ▶ Cutting sidewalks
- ▶ Controlled demolition
- ▶ Cutting plumbing and electrical trenches in slabs
- ▶ Construction of structural foundations
- ▶ Road and street repairs
- ▶ Residential and commercial improvements
- ▶ Broken water pipe and sewer line repair
- ▶ Highway patching





CONCRETE REPAIR & RE-STRENGTHENING

When an existing structure deteriorates, or alterations need to be made due to the form failing to serve its purpose, concrete strengthening is the best way to repair issues for long-term benefits. Generally, all concrete structures are reinforced with some type of material, but building owners will inevitably need high-rise maintenance of concrete structures that won't break the budget. Reinforced concrete results when a steel reinforcement (steel bar) is used to increase the strength of the structure. To create reinforced concrete, Structural Engineers turn to carbon fiber strengthening of concrete and Fiber Reinforced Polymer Concentrate (FRP). Such solutions are available for use on reinforced concrete, steel, wood, and masonry load-bearing structures. However, in some cases, concrete strengthening additives are also needed to extend the life of the concrete, control setting and hardening, and fix the general structural behavior of the concrete.

Over the time, a building can take quite a beating, its purpose can change, loads may increase, the local standards may evolve, or even historical structures may need more support. In response to this, repair and strengthening of reinforced concrete structures resist these stresses that would cause regular concrete to crack and crumble. While other resources, such as building waterproofing services, can help maintain a building for the short term, concrete strengthening will become a necessity. Reinforced concrete will allow for the arrangements supported to have more comprehensive strength than traditional concrete, extending the long life service of the design. Using concrete strengthening, the steel supports added to larger systems will have a lower risk of erosion due to less water gradually entering the masonry work. Rather than reconstruct an entire building, it is much simpler to provide the proper reinforcements during initial construction and with all repairs.

HOW TO CHOOSE THE RIGHT MATERIAL & PROFESSIONAL CONTRACTOR

A key component in concrete maintenance is an evaluation of materials and knowing how building maintenance will reap the most beneficial results possible. For instance, evaluating how the structure needs to be strengthened will guide the selection of proper materials for the job.

Following Materials may be used to strengthen the Existing Concrete Structure

- ▶ Non Sag Epoxy Repair Mortar
- ▶ Flow-able Epoxy Grout
- ▶ Carbon Fiber Reinforced Products
- ▶ Fiber reinforced Polymer Composite Materials





Fiber-reinforced polymer composite (FRP) materials are made of high-strength continuous fibers, such as glass, carbon, or steel wires, embedded in a polymer mix. The fibers provide the reinforcement, while the polymer matrix protects the fibers and transfers loads between the fibers.

There may be a need to strengthen concrete columns in other situations, which can be done by reinforced concrete jacketing, steel jacketing, or FRP confining or jacketing. Columns often need to be strengthened once the load carried by the column has increased; the inclination is more than allowable, or when the compressive strength of the concrete or the type and percentage does not meet evolving code requirements. It's up to Structural Engineer to thoroughly evaluate the best ways to strengthen their assets over the time, which means choosing the right form of reinforcement can literally make or break the building. That's why it is important to choose a partner that can help your team increase property value by handling everything related to high-rise maintenance.

Brisk Engineering Services is always there to be your best Professional Service Provider in the field of Construction & Fabrication when taking care of building in every possible aspect.

Our goal is to be a trustworthy partner because it is always more beneficial to add structural modifications rather than to build a new building from the ground level, pardon the pun.

**“To Extend the Life of your Building's Concrete Structure
you may contact Brisk Engineering Services”**





REINFORCEMENT SURVEYS

Brisk Engineering Services in conjunction with the very latest technology from Hilti is at the forefront of the analysis of the Steel Reinforcement in Reinforced Concrete Structures. The Ferro-scan PS-250/PS-300 is portable, fast and can detect and measure the depth of cover, diameter and positioning of reinforcing bars over a wide area.

KEY FEATURES OF REINFORCEMENT SURVEYS

<ul style="list-style-type: none"> ▶ Verification of Reinforcement ▶ Checking of Concrete Cover ▶ Avoiding Rebar Hits ▶ Scans Large Areas Quickly ▶ Single Scans up to 30m ▶ Full Range of Case Studies Available ▶ Fully Trained Accredited Operators ▶ Covering all over Pakistan 	<ul style="list-style-type: none"> ▶ Provides Viewable image of the Reinforcement ▶ Extended PC Evaluation and Document Possibilities ▶ Reinforcement Shown as Clearly Visible Grey-Scale Image ▶ Fully Equipped Mobile Workforce
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The verification of reinforcement is vital in today's modern building techniques and reinforcement surveys can aid in a variety of situations. The specially designed PC software permits further processing, evaluation, exact analysis and documentation of all the data recorded.

<ul style="list-style-type: none"> ▶ Quality Control ▶ Building acceptance inspections ▶ Cover checking over a large area during renovation ▶ Provides a complex algorithm which Ensures good differentiation between closely spaced reinforced bar 	<ul style="list-style-type: none"> ▶ Post Installed Reinforcement ▶ Verification of Length ▶ On the Spot Printouts ▶ Prints out Scanned Images & Reports including Data from Several Points in the Images
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OUR VALUABLE CLIENTS

BRISK ENGINEERING SERVICES has earned a reputation for developing innovative solutions and quality products to our customers. The following projects are samples. Each project, we worked on, were unique and presented a specific set of problems, call for an integrated approach by tailor blend of people's skills and experiences. Brisk Engineering has been at the forefront of using the latest technologies to deliver a quality satisfaction back up with full regulatory compliance. Although no single Brisk Engineering Services Project captures the breadth of our capabilities.

Collectively this project gives a flavor of what Brisk Engineering services is all about

- ▶ Amreli Steels Ltd.
- ▶ Bus Transit System (LHE)
- ▶ Comsat
- ▶ Deen Construction
- ▶ Dolmen City
- ▶ Kassim Textile
- ▶ Lignum Residency (ISB)
- ▶ Nishat Boutique Hotel (LHE)
- ▶ P.T.E.T. Tower (ISB)
- ▶ Thatta Cement Factory
- ▶ Bestway Cement Ltd. (LHE)
- ▶ Al-Azaan Engg. (Ghotki)
- ▶ AMCORP Engg & Const. Pvt. Ltd.
- ▶ Alferoze (KHI)
- ▶ A.H. Constructors (KHI)
- ▶ Ali Group (LHE)
- ▶ Arsalan Construction (Ghotki)
- ▶ Ataullah Associates (KHI)
- ▶ A.Y. Builders (KHI)
- ▶ Building Comforts (KHI)
- ▶ Descon Engineering Ltd. (KHI)
- ▶ Engineering Kinetics Ltd. (KHI)
- ▶ Fabcon Contractors (KHI)
- ▶ Frontier Works Organization (Turbat)
- ▶ Engro Fertilizers (Ghotki)
- ▶ D.G. Khan Cement (D.G. Khan & Lasbel)
- ▶ Asia Feeds.
- ▶ Byco Pakistan.
- ▶ General Tyre & Rubber Products.
- ▶ Huffaz Seamless Pipes.
- ▶ Indus Motors.
- ▶ International Industries Ltd.
- ▶ International Steel Ltd.
- ▶ Matol (Pvt.) Ltd
- ▶ Pakistan Cable.
- ▶ People Steel Mills
- ▶ Siemens Pakistan.
- ▶ Unicol (Pvt.) Ltd.
- ▶ Housing Enterprises (KHI)
- ▶ Hussain Kotex (KHI)
- ▶ IKAN Engineering (KHI)
- ▶ International Complex Projects Ltd. (KHI)
- ▶ Jan Muhammad Bhatti & Co. (T.M. Khan)
- ▶ Mughals Pakistan (KHI & LHE)
- ▶ Principle Builders & Contractors (KHI)
- ▶ S.M.K. Associate (KHI)
- ▶ Urban Developers (KHI)
- ▶ Five Star Construction Co. (KHI)



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