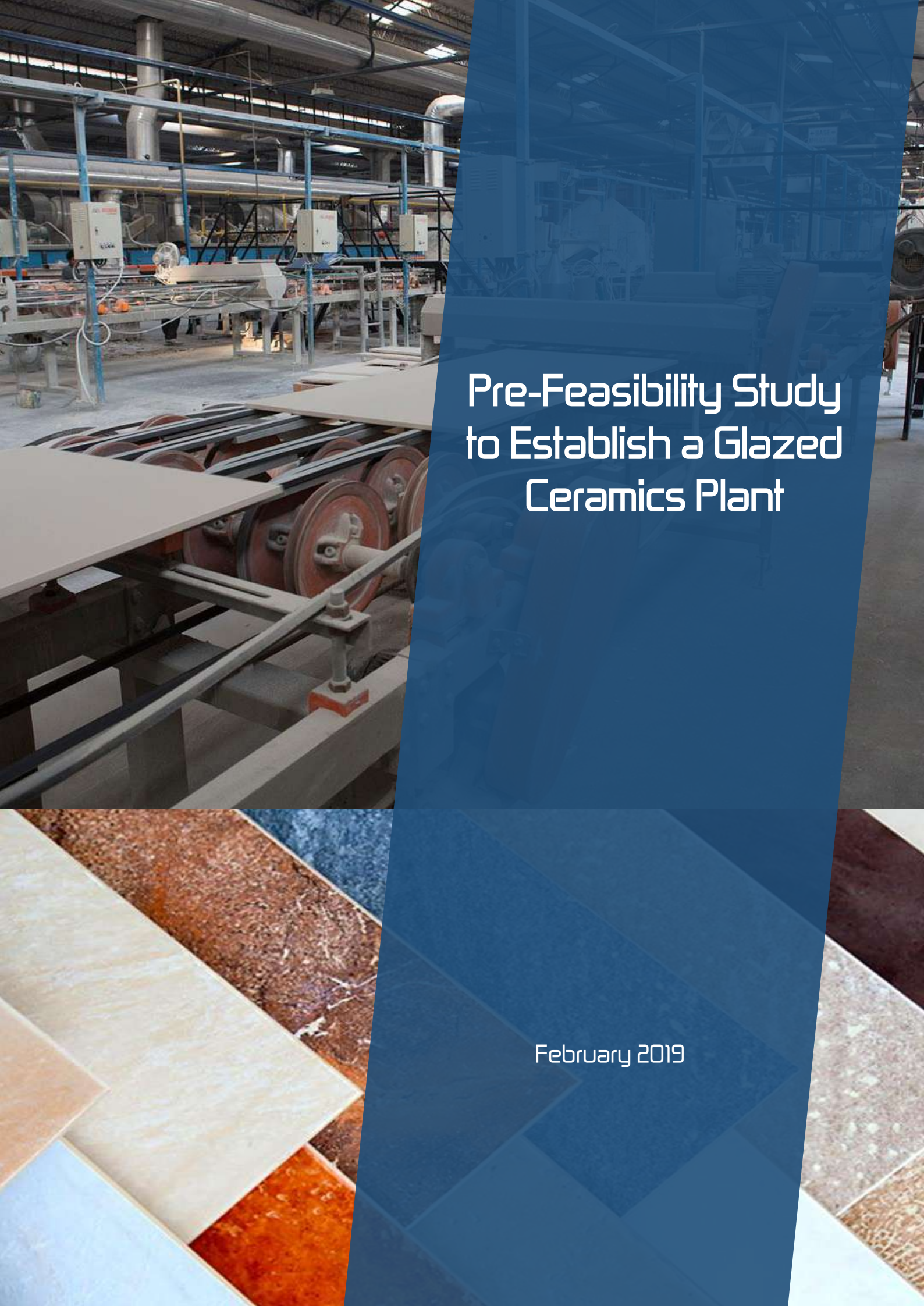


The background image is a composite. The top half shows a large industrial facility with a complex network of pipes, structural beams, and machinery, likely a ceramic manufacturing plant. The bottom half shows a close-up of various ceramic tiles in different colors and patterns, including beige, brown, and blue. A large, semi-transparent blue diagonal overlay covers the right side of the image, serving as a background for the title and date.

Pre-Feasibility Study to Establish a Glazed Ceramics Plant

February 2019

Pre-Feasibility Study to Establish a Glazed Ceramics Plant

Market, Technical and Financial
Analysis

Study Report

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إخلاء المسؤولية

حيث تبذل المنظمة جهوداً حثيثة في أدائها للخدمات الاستشارية، فإنها لا تقدم أي ضمان صريح أو ضمني بتحقيق نتائج ناجحة من تطبيق أي من التوصيات الواردة بها، وبدون تحديد لحصانات وامتيازات المنظمة بموجب القواعد القانونية الواجبة التطبيق، فإن المنظمة لا تكون مسؤولة تجاه العميل أو الغير، عن أي خسارة، أو تكلفة، أو أضرار، أو مسؤولية.

The following contributed to preparing the study:

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ساهم في إعداد الدراسة كل من:

1. شركة طلال أبو غزالة- سلطنة عمان
2. المهندس /سليمان البلوشي

Executive Summary

The potential for Glazed Ceramic products is medium to high given the local & regional demand & even though competition exists in Oman this still leaves opportunities to enter the market to manufacture glazed ceramic tiles, this coupled with the use of the availability of local raw material at competitive rates major raw material being clay. The selling price of the standard ceramic products range from 1.5 – 2.0 RO sq/m & can increase to more than 3.0 RO per sq/m depending on design & quality – study has calculated the rate at 1.5 RO sq/m.

The cost of investment for plant and machinery amounts in the region of 4.4 million RO and the proposed capacity is estimated at 13.0 million sq/m per year (installed capacity), in year 1 the production capacity is 50% utilization resulting in the production of 6.5 million sq/m.

Year	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10
NP %	0.45	4.15	5.98	7.34	8.40	8.49	8.33	8.17	8.01	7.84
GP %	35.06	35.99	36.65	37.14	37.52	37.40	37.27	37.14	37.01	36.87

PROJECT HIGHLIGHTS

Name of Project: Glazed Ceramics Plant.
 Total Investment Cost: 5.4 Million OMR
 Main Plant & Machinery Cost: 4.4 million OMR
 Building Cost: 714,820 OMR
 Plant Capacity: The proposed Plant will have & installed capacity of 13 million sq/m. In 1st year operation the production output amount to 6.4 million sq/m.
 Local Market Demand. The total estimated demand 39 Million OMR in Oman (Import Substitution)
 Source of finance: 60% Debt & 40% equity. (As determined by the investors)

Total Investment	Production capacity	Revenue
• 5.4 million OMR • Source of Finance: banking at 60%	• Year 1 = 50% • Year 2 = 60% • Year 3 = 70% • Year 4 = 80% • Year 5 = 90% • Year 6 = 90% • Year 7 = 90% • Year 8 = 90% • Year 9 = 90% • Year 10 = 90%	• Yr 1= 9.7 m OMR • Yr 2= 11.7 m OMR • Yr 3= 13.6 Million OMR • Yr 4= 15.5 Million OMR • Yr 5= 17.4 Million OMR • Yr 6= 17.4 Million OMR • Yr 7= 17.4 Million OMR • Yr 8= 17.4 Million OMR • Yr 9= 17.4 Million OMR • Yr 10= 17.4 Million OMR

Broad Scope of Study & Methodology

This feasibility study covers three main area's to include marketing & market research, evaluation of the technical aspects and the financial analysis to determine the feasibility of the project.

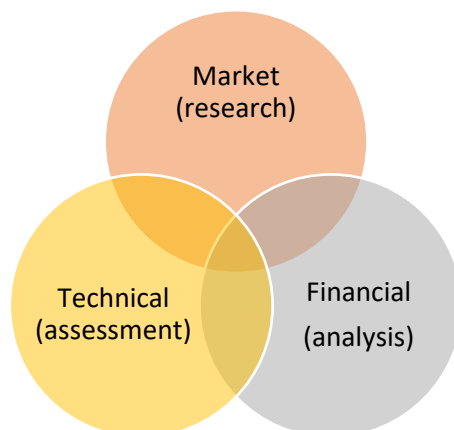
The Market Assessment consists of:

- Market size of Glazed Ceramics in Oman.
- Market survey of the Glazed Ceramics prices for the various floor & wall tile products.
- Overview of the local competitors in Oman region.
- Supply & Demand: estimate the supply & demand of Glazed Ceramics products to include import, export data.
- Market share of the proposed new plant.

The Technical Part of the Study comprises all technical requirements needed to render the Glazed Ceramics plant operational to include capacity utilization, raw material, staff requirements & process flow.

The Financial Analysis for the project covers the following:

- Cost of the project (total investment)
- Source of Finance (equity & debt)
- Financial assumptions
- Financial schedules comprising:
 - Projected Income Statement
 - Projected Balance Sheet
 - Projected Cash Flow Statement
 - Projected Revenue Stream
 - Depreciation Schedule
 - Salaries (Number of required employees & the expected Salaries)
 - Loan repayment Schedule
 - Finance Cost
 - Financial Ratios
 - Internal Rate of Return & Payback period.



Introduction

Introduction

Ceramic tile products are commonly used in interior, exterior, commercial and residential applications. They are made of porous body with a coating of white or colored Glaze having properties of good resistance to weather and chemicals, with high strength, hard and with a glossy surface of different colors with a pleasing appearance

The market for ceramic glazed tiles is very bright since its demand is increasing at a moderate yet consistent rate. Due to many reasons from improved living standard coupled with good economic situation along with supporting Govt. policies for housing sector due mainly to growth in population all of which is creating a positive demand position of these products. These items form an essential and integral part of consuming sector like housing, educational and research institutions, hospitals, Industries, hotels, restaurants, cinema halls and other public places. The demands of these products also increase by the need of renovation works of old buildings.

This project entails the set-up of a new Glazed Ceramics Plant. The production output of the new proposed plants will focus on mainly the Oman market.

Target Market	
Oman 20%	Export 80%

Assumptions

Market Rate Selling Price ranges between 1.5 – 2.0 RO per sq/m. Study taken the lower selling price range of 1.5 RO per sq/m for both floor and wall tiles

- Target Market Local 20% Export 80%
- Omanization achievable at minimum rate of 80%.
- Welfare estimated at 15% cover for Ticket, Holidays & Other employee expenses.
- 2 shift system (8 hours per shift)
- Working Capital for Raw material and Salaries is for 3 months

Production Capacity

PRODUCTION CAPACITY		
Total Installed Capacity	13 million	sq/m year
Capacity Utilized Year 1	6.4 million	sq/m
Working Day Per Year	300	days

The proposed Ceramic Plant products consist of 2 types these are as follows:

Si.No.	Description	Size sq/m	Output Distribution
A	Floor Tiles	1	70%
B	Wall Tiles	1	30%

A field survey was conducted to local distributors and agents and revealed that the demand of floor tile is significantly more than wall tiles estimated at 70% floor and 30% wall.

1.1. Product Description

Ceramic tile produced in Oman is a mixture of multiple mineral-based natural materials, including but not limited to clay, Wollastanite, talc, shale & Glazed. The tiles are either pressed or extruded into the desired shape and fired in kilns at high temperatures. Ceramic tile is fire resistant, non-combustible, durable (lasts a lifetime) and extremely easy to maintain.

As floor and wall coverings, ceramic tile products provide dual functions. They serve an aesthetic function as a design component, and a technical function as a building finishing material. As a building material, ceramic tile is capable of withstanding a wide range of environmental stresses.

Ceramic tiles are classified by their production method, either dry pressed or extruded, or the level of water absorption measured as a percentage. Based on water absorption, a ceramic tile is characterized as impervious, vitreous, semi-vitreous, or non-vitreous.

Standard Specifications for Ceramic Tile:

- Pressed Floor Tile: Vitreous, semi-vitreous or non-vitreous, and must be manufactured by having the body of the tile formed by pressing. Primarily intended for use on floors, but also suitable for use on walls and countertops. Only includes tiles which have a facial area of 9 square inches or more.
- Quarry Tile: Includes impervious, vitreous, and some semi-vitreous tiles (up to 5%) which must be formed by the extrusion process from natural clay or shale.
- Glazed Wall Tile: Usually non-vitreous and typically pressed, intended for use on walls.



Pressed Floor Tile



Quarry Tile



Glazed Wall Tile



Market Analysis

Market Analysis

2.1. Market Overview

The Middle East and in particular the GCC region is home to some of the most active construction markets in the world with the United Arab Emirates (UAE) being the most active construction market in the region, along with the Kingdom of Saudi Arabia (KSA) and Qatar contributing as growth hubs. Dubai and Abu Dhabi make up for almost 90 per cent of the construction taking place in the UAE. There are in the region of 2.4 trillion worth of planned projects in the GCC region within the forthcoming several years¹.

The large-scale construction projects in this region consistently feed the demand for large volumes of construction materials and the ceramics tiles market is one of the fastest growing ones in the building materials industry. Imports play a major role in the GCC tiles market; the region imports almost 40 per cent of its total demand. China, Spain, Italy, Egypt, and India are the largest exporters of tiles to the countries in the GCC. The region also actively exports tiles mainly to other nations in the Middle East and Africa. It is able to competitively price its products mainly due to the availability of raw materials like Clay and kaolin. Hence, the raw material cost is expected to remain stable in the near future.

The construction industry in the GCC has been fueled especially in the later decade by the following factors:

- The population growth rate in the GCC is among the highest in the world. 70% of the regions indigenous population is under 30 years of age. This requires significant growth and demand specifically for new dwelling units, which is one of the factors driving building construction sector through the GCC countries.
- Permitting expatriates to own property in Dubai and other GCC countries has significantly increased the demand for new housing.
- Significant investments to boost the tourism and leisure industry in most of the GCC countries.

Table 2-1: Oman Glazed Ceramics Exporting During the Period (2013-2017)

	2013	2014	2015	2016	2017	AGV
Value USD (000)	62,976	96,412	83,738	38,434	180	56,348.00
Weight in Ton	167,116	179,113	196,472	172,897	895	143,298.6

Product: 690890 Glazed ceramic flags and paving, hearth or wall tiles; glazed ceramic mosaic cubes and the like, whether or not on a backing

Source: Trademap.com 690890 HS Code

¹ www.meedprojects.com

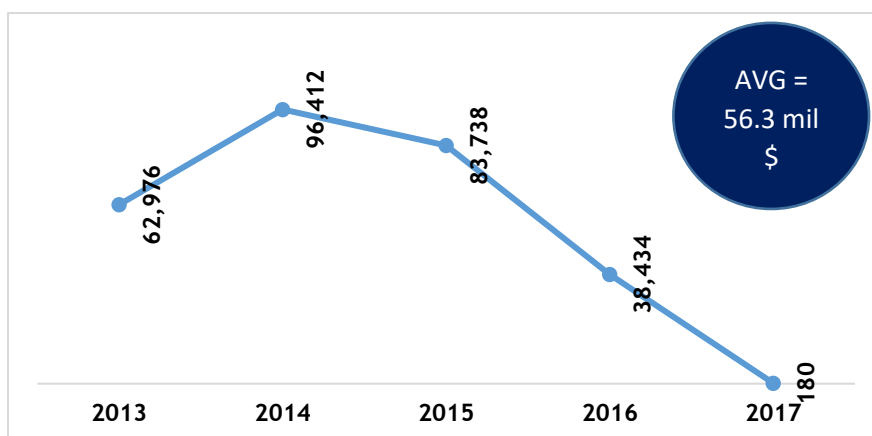


Figure 2-1: HS Code: 690890 - Exporting Value USD (000)

The export for HS Code 690890 amount to 62.9 million USD in 2013. In the following year 2014 the total export increased to 96.4 million. In 2015 the export decreased to 83.7 million USD, in 2016 the total export decreased significantly to a total of 38.4 million USD. In 2017 the total export of HS Code 690890 reduced significantly to a total of 180,000 USD.

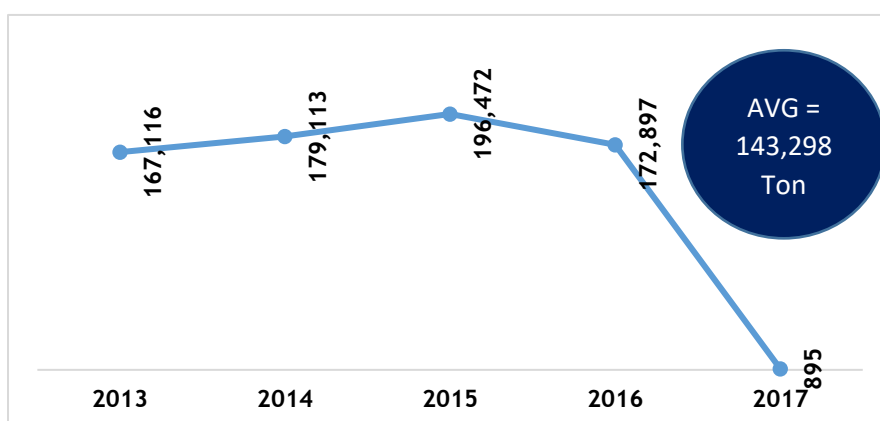


Figure 2-2: HS Code: 690890 - Exporting Weight Ton

The export for HS Code 690890 amount to 167,116 tons in 2013. In the following year 2014 the total export increased to 179,113 tons. In 2015 the export increased to 196,472 tons, in 2016 the total export decreased to a total of 172,897 tons. In 2017 the total export of HS Code 690890 reduced significantly to a total of 895 tons.

Table 2-2: Oman Glazed Ceramics Import During the Period (2013-2017)

	2013	2014	2015	2016	2017	AGV
Value USD (000)	81,288	267,658	77,100	82,471	506	101,805
Weight in Ton	321,071	363,187	327,841	393,720	2,119	281,588

Product: 690890 Glazed ceramic flags and paving, hearth or wall tiles; glazed ceramic mosaic cubes and the like, whether or not on a backing

Source: Trademap.com 690890 HS Code

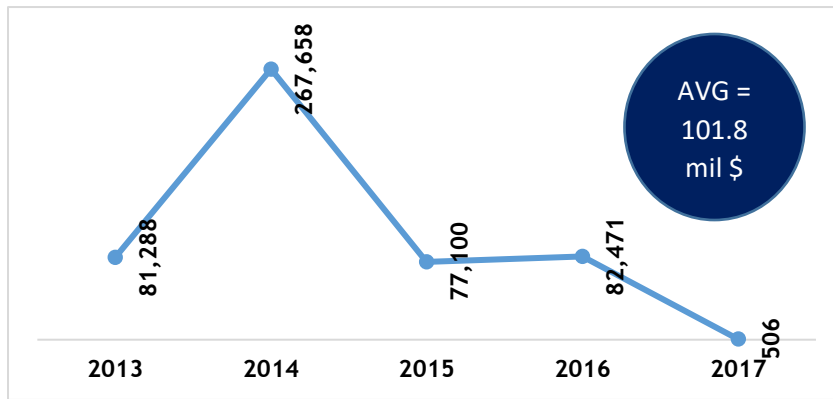


Figure 2-3: HS Code: 690890 - Importing Value USD (000)

The imports for HS Code 690890 amount to 81.2 Million USD in 2013. In the following year 2014 the total import increased significantly to a total of 267.6 Million USD. In 2015 the import decreased significantly to 77.1 Million USD, in 2016 the total import increased to a total of 82.4 Million USD. In 2017 the total import of HS Code 690890 amount reduced significantly to a total of 506,000 USD.

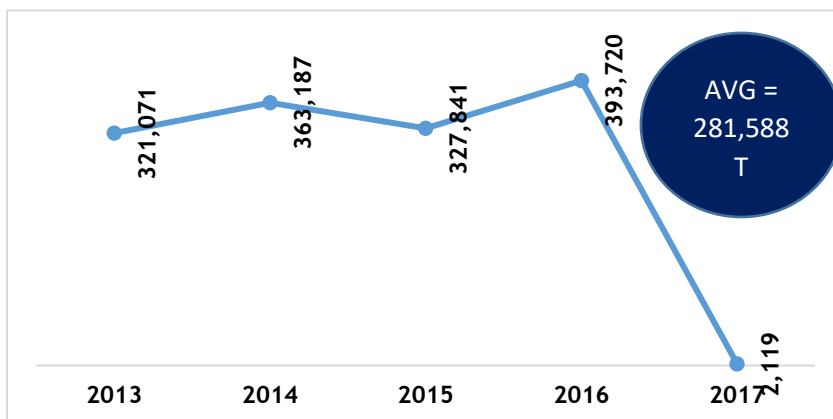


Figure 2-4: HS Code: 690890- Importing Weight Ton

The imports for HS Code 690890 amount to 321,071 tons in 2013. In the following year 2014 the total import increased to a total of 363,187 tons. In 2015 the import decreased to 327,741 tons, in 2016 the total import increased to a total of 393,720 tons. In 2017 the total import of HS Code 690890 amount reduced significantly to a total of 2,119 tons.

Table 2-3: GCC Glazed Ceramics Imports During the Period (2013-2017)

	2013		2014		2015		2016		2017	
	V (000)	Q (Ton)	V (000)	Q (Ton)	V (000)	Q (Ton)	V (000)	Q (Ton)	V (000)	Q (Ton)
United Arab Emirates	176,545	690,560	182,373	772,234	202,289	804,834	390,756	749,340	15,292	83,235
Bahrain	41,510	118,168	41,222	125,201	45,354	138,387	40,813	141,880	1,425	No Quantity
Qatar	74,301	170,287	94,211	190,520	81,993	212,511	65,291	165,024	1,243	No Quantity
Saudi Arabia	386,038	1,333,989	365,598	1,310,116	353,585	1,384,992	250,677	1,061,126	26	105
Kuwait	77,611	259,582	72,382	264,457	68,046	253,215	67,177	311,295	0	0
Total	756,005	2,572,586	755,786	2,662,528	751,267	2,793,939	814,714	2,428,665	17,986	83,340

Product: Product: 690890 Glazed ceramic flags and paving, hearth or wall tiles; glazed ceramic mosaic cubes and the like, whether or not on a backing

Source: Trademap.com 690890 HS Code

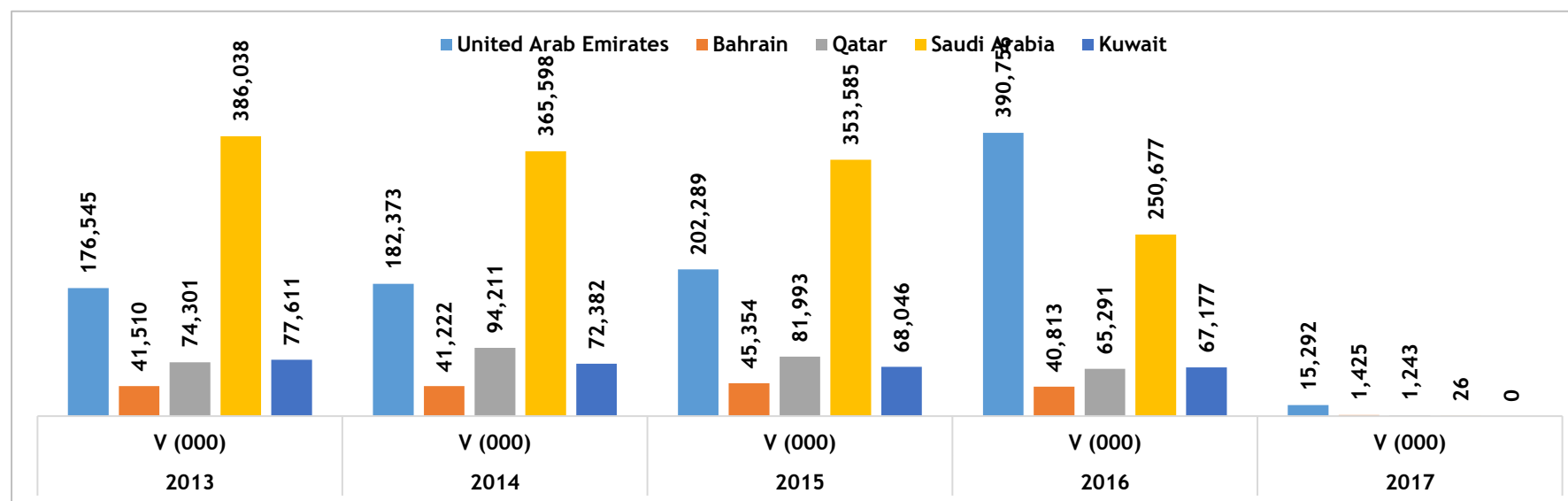
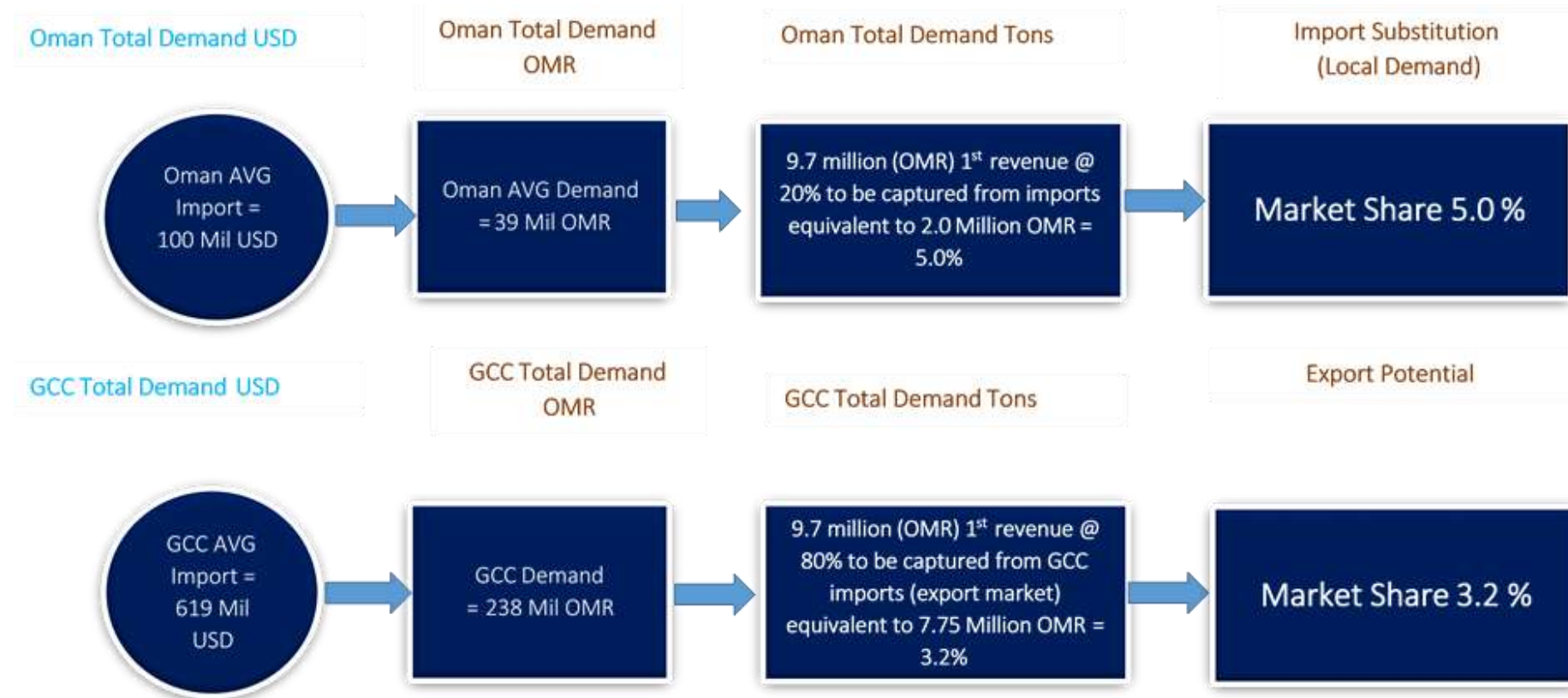


Figure 2-5: HS Code (690890) Imports During the Period (2013-2017) – Value

Supply & Demand



The Oman products imports of ceramic is estimated at 39 million OMR per year and 238 MILLION OMR tons for the entire GCC market.

2.2. Major Competitors - Oman

Product: 690890 Glazed ceramic flags and paving, hearth or wall tiles; glazed ceramic mosaic cubes and the like, whether or not on a backing

Table 2-4: Oman's major competitors of Glazed ceramic flags and paving, hearth or wall tiles; glazed ceramic mosaic cubes

Company	Company Status	Unit	2017	2016	2015	2014	2013
			Capacity	Capacity	Capacity	Capacity	Capacity
Al Aman General Trading And Contracting Company - 4000518	Operational	Sq-Meter	90000	90000	90000	90000	90000
Almiyahi Trading And Contracting - 4000983	Operational	Meter	360000	360000	360000	360000	360000
Al Nasr Tiles And Cement Products Llc - 4000332	Operational	Sq-Meter	1089000	1089000	1089000	1089000	1089000
Al Zamayem Trade And Industry And Contracting Company - 4000328	Operational	Units	1500000	1500000	1500000	1500000	1500000
Amco Tiles Ltd. Company - 4000237	Operational	Sq-Meter	91000	91000	91000	91000	91000
MOHAMED DAWOOD And PARTNERS - 4001071	Operational	Sq-Meter	13000	13000	13000	13000	13000

2.3. Competitors Analysis - Oman

Table 2-5: Competitors analysis - Oman

Revenue 2017	OMAN CERAMIC	AL-MAHA	AL-ANWAR
Revenue RO	3,330,000	8,656,000	20,819,000
Sale Price Per SQ.M (Average)	1.75	1.75	1.75
Capacity SQ.M	1,902,857.14	4,946,285.71	11,896,571.43

The major players in Oman include Oman Ceramics, Al Maha Ceramics and Al Anwar Ceramics; according to official source CMA and being SAOG Companies the revenue is illustrated in the above table and the production capacities output is estimated on the rate of 1.75 RO per sq.m average market selling price.

Source: Muscat Securities Market Al Manar SOAG/Al

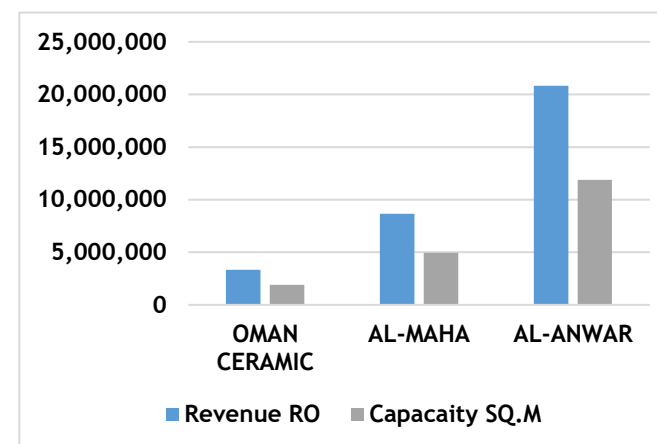


Figure 2-6: Competitor Analysis Based on 1.75 OMR per sqm

2.4. Regional Competitors – GCC

2.4.1. Regional Competitors – Bahrain

Product: 690890 Glazed ceramic flags and paving, hearth or wall tiles; glazed ceramic mosaic cubes and the like, whether or not on a backing

Table 2-6: Regional Competitors - Bahrain

Company	Company Status	Unit	2017	2016	2015	2014	2013
			Capacity	Capacity	Capacity	Capacity	Capacity
Al Hayki Tiles Factories - 2001462	Operational	Sq-Meter	240	240	240	240	240

2.4.2. Regional Competitors – Kuwait

Product: 690890 Glazed ceramic flags and paving, hearth or wall tiles; glazed ceramic mosaic cubes and the like, whether or not on a backing

Table 2-7: Regional Competitors - Kuwait

Company	Company Status	Unit	2017	2016	2015	2014	2013
			Capacity	Capacity	Capacity	Capacity	Capacity
Al-Duaij Al-Sidairawi and Parteners General Trading And Cont. Co. - 3001672	Operational	Pieces	6166666	6166666	6166666	6166666	6166666
Al Aqsa Building Materials Factory - 3001945	Operational	Units	23160000	23160000	23160000	23160000	
Al Ettikal Mosaic Tiles Factory - 3000354	Operational	Units					3000000
Al Fintas Tiles Production Factory - 3000417	Operational	Units					2000000
Al Harbi Factory - 3000954	Operational	Units	1591667	1591667	1591667	1591667	1591667
Al Hinyan Tiles Factory - 3000805	Operational	Units					3000000
Al Naqi Intl. Trading And Manufacturing Co. - 3000323	Operational	1000 Units					6000
Al Obaid Tiles Factory - - 3000332	Operational	Units					6000000
AL QANAT TILES And MOSAIC FACTORY - - 3000340	Operational	Units					1500000
Al Roumi Trading And Contracting Co. -Al Roumi Tiles Factory - 3000347	Operational	Sq-Meter					187500
Al Roumi Trading And Contracting Co. -Al Roumi Tiles Factory - 3000347	Operational	Units	2500000	2500000	2500000	2500000	
Hassan Abul Ceramic Factory - 3001291	Operational	Meter	200000	200000	200000	200000	200000
International Works General Trading And Contracting Group Co. - 3001678	Operational	Pieces	1500000	1500000	1500000	1500000	1500000

Company	Company Status	Unit	2017	2016	2015	2014	2013
			Capacity	Capacity	Capacity	Capacity	Capacity
Mohd.Abdul.M.Al-Khurfay And Sons General Trading And Contr.Co. - 3000465	Operational	Meter	104350	104350	104350	104350	12000
suliman Bin Issa And Partners Co. (Al Issa Floor Tiles) - 3000950	OPERATIONAL	UNITS					3000000

2.4.3. Regional Competitors – Qatar

Product: 690890 Glazed ceramic flags and paving, hearth or wall tiles; glazed ceramic mosaic cubes and the like, whether or not on a backing

Table 2-8: Regional Competitors – Qatar

Company	Company Status	Unit	2017	2016	2015	2014	2013
			Capacity	Capacity	Capacity	Capacity	Capacity
Al Quds Trading And Tiles And Blocks Industries Factory - 5000161	Operational	Sq-Meter	150000	150000	150000	150000	150000
Internatioanl Tiles And Marbles Factory - 5000169	Operational	Sq-Meter	104000	104000	104000	104000	104000
Middle East Industry Tiles And Block Co. - 5001239	Operational	Sq-Meter	500000	500000	500000	500000	500000
Simsimah Blocks Factory - 5000415	Operational	Units	10000	10000	10000	10000	10000

2.4.4. Regional Competitors – KSA

Product: 690890 Glazed ceramic flags and paving, hearth or wall tiles; glazed ceramic mosaic cubes and the like, whether or not on a backing

Table 2-9: Regional Competitors – Saudi Arabia

Company	Company Status	Unit	2017	2016	2015	2014	2013
			Capacity	Capacity	Capacity	Capacity	Capacity
Al-Eftikhar Cement Prod. Est. - 6001357	Operational	Sq-Meter					60000
Al-Eftikhar Cement Products Establishment - 6000345	Operational	Sq-Meter					60000
Al-Rashdat Tile Factory - 6001381	Operational	Sq-Meter					162000
Al Armac Cement Products Factory - 6005993	Operational	Sq-Meter	300000	300000	300000	300000	300000
Al Baseera Tiles Factory - 6010954	Operational	Sq-Meter				190000	190000
Al Ettihad Industrial And Commercial Development Company - 6000353	Operational	Sq-Meter				260000	260000
Al Ghoraid Tiles Factory - 6002319	Operational	Sq-Meter				66651	66651
AL GOSAIBI And AL SALLOUM CO. - 6000432	Operational	Sq-Meter				32500	32500

Company	Company Status	Unit	2017	2016	2015	2014	2013
			Capacity	Capacity	Capacity	Capacity	Capacity
Al Hajjri Blocks And Tiles Factory - 6003653	Operational	Sq-Meter	6000	6000	6000	6000	6000
Al Hamzi Building Materials Factory - 6002648	Operational	Cubic-Meter				30000	30000
Al Hirss Tiles Manufacturing Factory - 6120862	Operational	Sq-Meter	100000	100000	100000	100000	100000
Al Hosniya Tiles And Cement Products Factories - 6000503	Operational	Sq-Meter	2800000	2800000	2800000	2800000	800000
Al Janoub Marble And Tile Plant - 6000354	Operational	Sq-Meter				40560	40560
Al Jawaher Trading And Construction - 6118516	Operational	Units			75000	75000	75000
Al Jawhara Modern Tiles Factory - 6002490	Operational	Sq-Meter	800000	800000	800000	800000	460000
Al Jawhrah Concrete Pipe Factory - 6121275	Operational	Sq-Meter	78000	78000	78000		
Al Mansour Industries For Building Materials. - 6000364	Operational	Sq-Meter	450000	450000	450000	450000	450000
Al Mas Saudi Ceramics Factory - Branch - 6120864	Operational	Sq-Meter	1000000	1000000	1000000	1000000	1000000
Al Mawadah Tiles Factory - 6003008	Operational	Sq-Meter				180000	180000
Al Nahda Al Hadeetha Tiles Factory - 6118372	Operational	Sq-Meter					1500000
Al Nahda Modern Factory For Tiles - 6004674	Operational	Sq-Meter				1500000	1500000
AL OTHMAN MARBLE And TILES FACTORY - 6005720	Licensed	Sq-Meter	105000	105000	105000	105000	105000
Al Qalaa Industrial Company - 6000890	Operational	Sq-Meter			154000	154000	154000
Al Rasheed Cement Products Factories - 6001355	Operational	Sq-Meter				94000	94000
ALSAFA TILES And MARBLE FACTORY - 6006393	Operational	Sq-Meter	250000	250000	250000	250000	250000
Al Sahel Automatic Blocks And Tiles Factory - 6119471	Operational	Sq-Meter				20000	20000
Al Shafdali Tiles Factory - 6002046	Operational	Sq-Meter				60000	60000
Arab Company For Cement Products - 6120496	Operational	Sq-Meter	300000	300000	300000	300000	300000
Arab Construction Materials Co - 6000397	Operational	Sq-Meter					265000
Arabian Tiles Co. Ltd. -Artic- - 6003812	Operational	Sq-Meter	1500000	1500000	1500000	1500000	2000000
Arafa Tiles Factory - 6003482	Operational	Sq-Meter				600000	600000
AZIZIAH TILES And ROCKS FACTORY - 6000342	Operational	Sq-Meter	915000	915000	915000	915000	915000
BILADI TILES GRANITE And MARBLE FACTORY - 6003491	Operational	Sq-Meter	600000	600000	600000	600000	600000
Gulf Tiles And Blocks Production Factory Company - 6005434	Operational	Sq-Meter				480000	480000
Ibrahim Abdallah Al-Bibi Est. - 6000389	Operational	Sq-Meter					281625
Jbarah Mohammad Almadhaki Tile Fac. Co. - 6001338	Operational	Sq-Meter	100000	100000	100000	100000	100000
MASOUD ABDULAZIZ And BROTHERS COMPANY - 6000937	Operational	Sq-Meter					108000
Mohammed Ayed Al-Qahtani Tile Factory - 6120963	Operational	Sq-Meter	57000	57000	57000	57000	57000
Mohammed Bin Mree All Maslat Tiles Factory - 6120964	Operational	Sq-Meter	180000	180000	180000	180000	180000
Muneera Al Qahtani Tiles Factory - 6116225	Operational	Sq-Meter				180000	180000
Najran Tiles Factory - 6002657	Operational	Sq-Meter				70000	70000

Company	Company Status	Unit	2017	2016	2015	2014	2013
			Capacity	Capacity	Capacity	Capacity	Capacity
Naser Saad Alammar Granite And Blocks And Mosaice Factory - 6002664	Operational	Sq-Meter	180000	180000	180000	180000	180000
Omar Abedallah Bawazeer Tile Fac. -Al Baqmi Tiles Manufact.Est.- Perv. - 6002464	Operational	Sq-Meter			60000	60000	60000
Othman Al Rashidi Cement Products Factory - 6120509	Operational	Sq-Meter				120000	120000
Rawat Al Sokhoor Marble And Stone Factory - 6120982	Operational	Sq-Meter	275000	275000	275000	275000	275000
Saleh Abdulla Al Mudafer Construction Materials Factory - 6009922	Operational	Sq-Meter	900000	900000	900000	900000	900000
Saudi Tiles Factory - 6002318	Operational	Sq-Meter	1330000	1330000	1330000	1330000	1330000
The Saudi Building Materials Industry Co. - 6002655	Operational	SQ-METER	2500000	2500000	2500000	2500000	2500000

2.4.5. Regional Competitors – UAE

Product: 690890 Glazed ceramic flags and paving, hearth or wall tiles; glazed ceramic mosaic cubes and the like, whether or not on a backing

Table 2-10: Regional Competitors - UAE

Company	Company Status	Unit	2017	2016	2015	2014	2013
			Capacity	Capacity	Capacity	Capacity	Capacity
Al Nadeem Automatic Tiles Factory (Llc.) - 7000061	Operational	Sq-Meter	180000	180000	180000	180000	180000
Al Reem Tiles-Mosaic And Marble Factory - 7000079	Operational	Sq-Meter	250000	250000	250000	250000	250000
Dutile - 7001950	Operational	Sq-Meter	1500000	1500000	1500000	1500000	1500000
Fujairah Marble and Tiles Factory - 7000412	Operational	Sq-Meter	900000	900000	900000	900000	900000
Gulf Tiles - 7002845	Operational	Sq-Meter	1400000	1400000	1400000	1400000	1400000
Loaaloat Al Jazzera Company - 7001617	Operational	Units	1872000	1872000	1872000	1872000	1872000
Lootah Marble - 7001321	Operational	Sq-Meter	58760	58760	58760	58760	58760
Satwa Automatic Mosaic Tiles And Marble Factory - 7000826	Operational	Sq-Meter	250000	250000	250000	250000	250000
Terrazzo Ltd. - Marble And Tiles Branch - 7000395	Operational	Sq-Meter	1500000	1500000	1500000	1500000	1500000
Tiger Tiles And Marble (L.L.C) - 7000847	Operational	Units	100000	100000	100000	100000	100000
Uni Mix Block Industry L.L.C - 7000835	Operational	Sq-Meter	70000	70000	70000	70000	70000

Source: IMI Database

Technical Evaluation

3.1. Manufacturing Process

Tile body ingredients are combined with water, mixed, and milled into the desired consistency. The resulting slurry is then spray dried to achieve the optimal moisture content. The milled and dried ingredient, called “body material” or “prill”, is then pressed to the desired shape. Glaze is applied, as well as decorative treatment, and fired in a high temperature kiln. Process flow diagrams are shown in Figure “ceramic tile process flow diagram” in page 17.

3.2. Infrastructural Facilities

1. Power will be required for this project and the entrepreneur should approach appropriate authority accordingly.
2. Major Raw material availability: other raw material are locally available.
3. Water: Sufficient water will be required daily and suitable bore water will suffice if normal supply water from corporation is not available.
4. Transport: The unit should be in a place where it should be connected with road transport, so that there should be no problem in arranging raw materials and also dispatches of finished products.
5. Man power: Total man heads requirement for this project will be around 53 and since it is an established technology and as such there will no problem in getting suitable manpower for this project.
6. Registration & Licenses: The entrepreneur should obtain all relevant registration from MOCI and other Govt. offices before commencement of business activities
7. Pollution: There will be no harmful disposal of effluents. However, entrepreneur should obtain NOC from ministry of environment as per statutory norms.

3.3. Main Raw Materials

Clay

Clay is an earthen material comprised of extremely fine particles of minerals, organic matter, and trace amounts of naturally occurring metal oxides. It can be molded when wet and hardened into shape by heating at high temperatures. Clay is mined directly from the earth and can be used in the production of ceramic tiles with minimal processing. While clay is the primary ingredient in any tile, it is often blended with fluxing minerals to achieve the desirable characteristic of the tile product.

Glaze

Glaze is a smooth, protective coating commonly applied to tile products. Color and other aesthetic qualities can be given to the tiles through a glaze coating. Glazing materials are

comprised of glass frits, minerals, opacifiers, pigments, and water. It is sprayed, rolled or poured onto the tile, and fired to form an inseparable top coating.

3.4. Raw Material Composition

The raw material composition mainly consists of local Clay for 80% of the composition, this is followed by Talc consisting of 10% of the raw material composition, Wollastonite 5% & Glaze 7.0%.

Table 3-1: Raw material composition

Raw Material	%
Local Clay	%80
Wollastonite	%5
Talc	10 %
Glaze	5 %

Wollastonite

Wollastonite can be used in a variety of ceramic applications including ceramic glazes and bodies, enamels, frits, fluxes and in sanitary-ware. This industrial mineral is a source of CaO to alkaline glaze formulations to improve the strength of the glaze. Wollastonite also has a low LOI (< 1%) which gives minimal gas evolution during firing resulting in a smooth surface with diminished pinholing. Due to its acicular structure, wollastonite improves green strength and reduces crazing and checking especially during rapid heating and cooling. It has a low sintering temperature (approximately 991-1196°C) which is comparable to that of most natural frits.

Talc

Talc is a catalyst in the ceramic industry and has a high temperature resistance. In general, the addition of talc has positive effects to ceramic, for example it increases the mechanical and optical properties of the ceramic material and glazes. Through the addition of talc the properties of the product can be changed and the combustion temperature is reduced. This has a positive effect on the production costs.

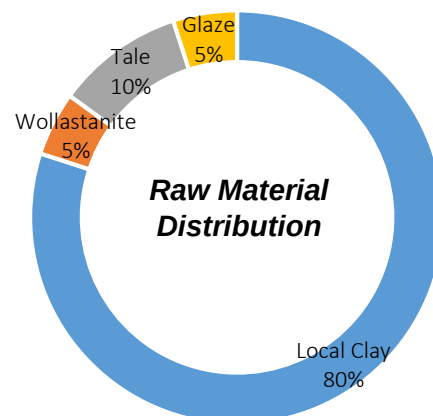


Figure 3-1: Raw Material Distribution

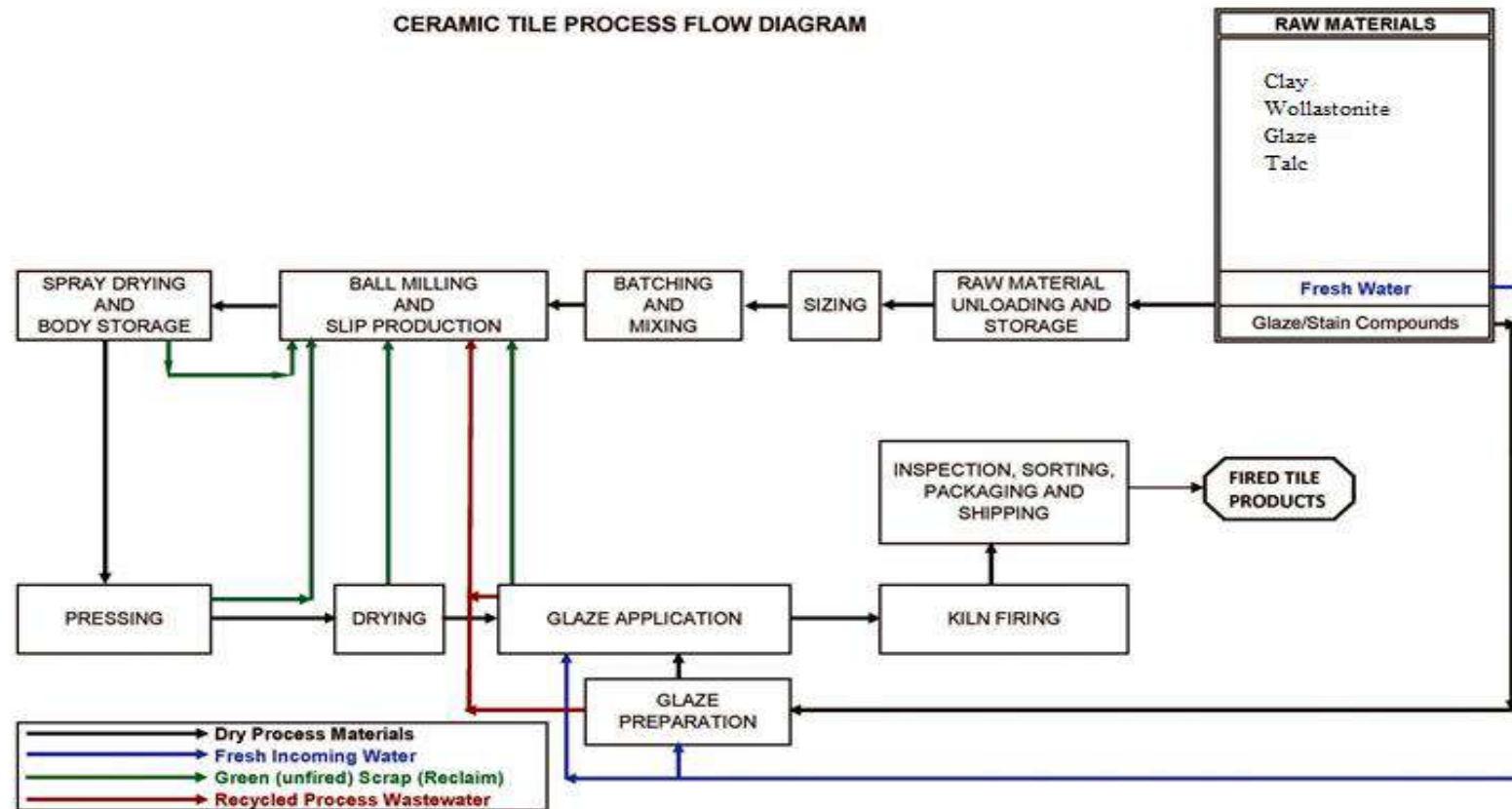


Figure 3-2: Ceramic tile process flow diagram

3.5. Manpower

Table 3-2: Direct Cost Manpower Requirements

Direct Cost Manpower Requirements						
Si.No	Position	Numbers	Salary Per Month	Salary Per Year	Welfare Expenses @15%	Grand Total
1	GM	1	4,000.00	48,000.00	7,200.00	55,200.00
2	Operations Manager	2	2,500.00	60,000.00	9,000.00	69,000.00
3	reduction Supervisor	2	2,000.00	48,000.00	7,200.00	55,200.00
4	Works Manager	3	1,800.00	64,800.00	9,720.00	74,520.00
5	Supervisor	5	1,200.00	72,000.00	10,800.00	82,800.00
6	Electrician	3	700.00	25,200.00	3,780.00	28,980.00
7	Skilled Workers	20	600.00	144,000.00	21,600.00	165,600.00
8	Semi-Skilled Workers	10	450.00	54,000.00	8,100.00	62,100.00
9	Driver Fork Lift	3	375.00	13,500.00	2,025.00	15,525.00
10	Cleaners	5	200.00	12,000.00	1,800.00	13,800.00
Total		53	13,825	541,500	81,225	622,725

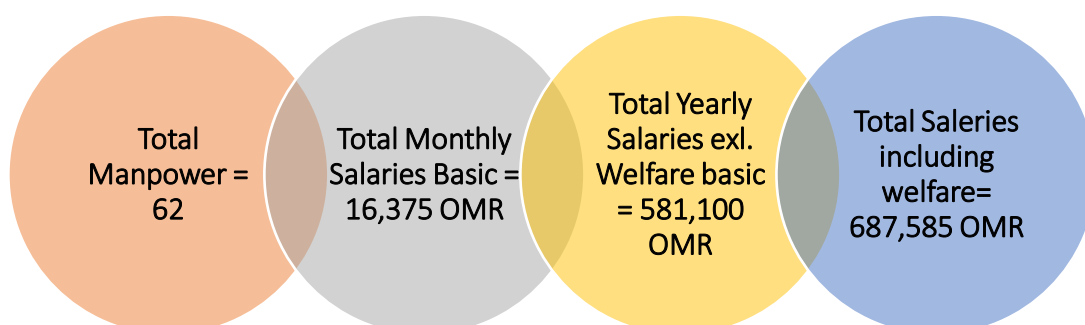
Table 3-3: Indirect Cost Manpower Requirements

Indirect Cost Manpower Requirements						
Si.No	Position	Numbers	Salary Per Month	Salary Per Year	Welfare Expenses @15%	Grand Total
1	Accounts & Admin Supervisor	2	600.00	14,400.00	2,160.00	16,560.00
2	Accounts Purchaser	2	450.00	10,800.00	1,620.00	12,420.00
3	Salesman	2	600.00	14,400.00	2,160.00	16,560.00
4	Security	2	500.00	12,000.00	1,800.00	13,800.00
5	PRO	1	400.00	4,800.00	720.00	5,520.00
Total		9	2,550.00	39,600.00	5,940.00	64,860.00

The manpower requirements are based on company industry experts experience to deem the plant operational.

The Omanization percentage will be a minimum of 70% given the laborers account for 5 employees of the total 62 workforces.

Direct staff include employees responsible for the operational and production of the Ceramic product and indirect staff include office staff.



The required manpower is based on the various numbers and type of main machinery listed in the cost of investment Capex (Main Plant and Machinery A1-A12) with due consideration of the total cost of Main Machinery Ref: page 21)

Other Source: Al Maha Ceramics Oman.

3.6. Organization Chart

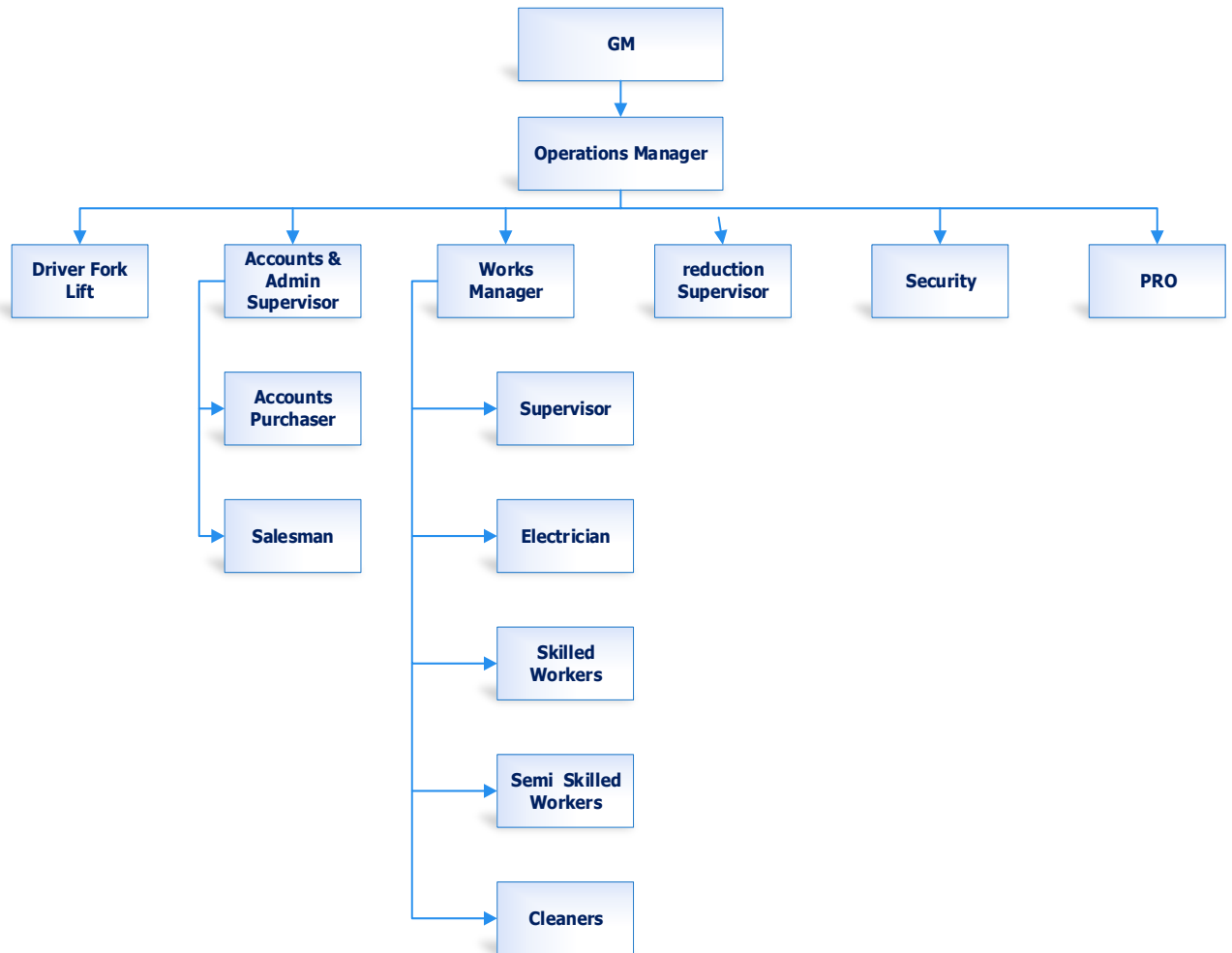


Figure 3-3: Organization chart