



WELDING ELECTRODE PRODUCTION KNOW-HOW FRAMEWORK

WESPEC.NET

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DOC A

DOC A , 1 PAPER

Cover Formula for the Manufacturing of EXXXX

| Code of Powder | Name of the Powder | % |
|----------------|--------------------|-----|
| 1 | x | x |
| 2 | x | x |
| 3 | x | x |
| 4 | x | x |
| 5 | x | x |
| 6 | x | x |
| 7 | x | x |
| 8 | x | x |
| 9 | x | x |
| 10 | x | x |
| 11 | x | x |
| 12 | x | x |
| X | x | x |
| TOTAL | | 100 |

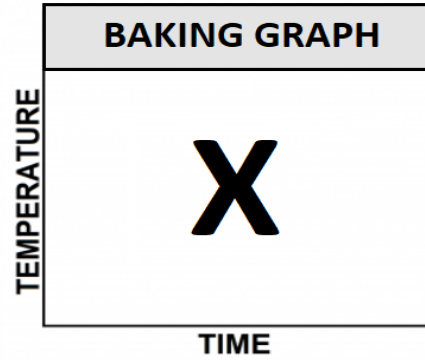
DOC B

DOC B , 1 PAPER

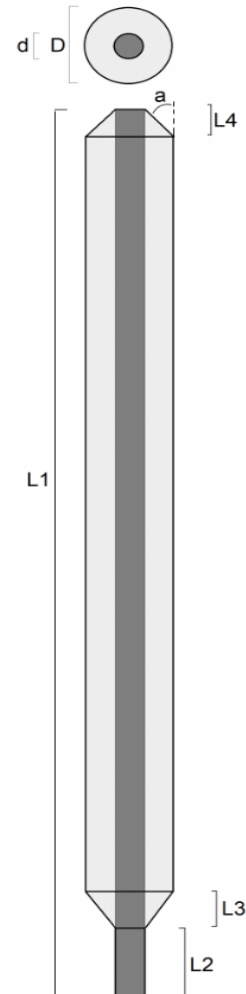
Production Instruction for Manufacturing of EXXX for Related Formula

| BINDER | |
|-----------------|-----------------|
| TYPE OF BINDER | KGR |
| 1 X | X |
| 2 X | X |
| WATER | X |
| Time of Dry Mix | Time of Wet Mix |
| X | X |

| DRYING & BAKING | |
|---------------------------|-----------|
| DRYING TIME IN AIR 25C | |
| X | |
| BAKING TIME AND TEMPETURE | |
| TIME | TEMPETURE |
| X | X |
| X | X |
| X | X |



| GEOMETRY | | | | | | |
|--|------|-----|------|-----|---|---|
| AWS: | DIN: | | | EN: | | |
| d | 2 | 2.5 | 3.25 | 4 | 5 | 6 |
| D/d | X | X | X | X | X | X |
| L1 | X | X | X | X | X | X |
| L2 | X | X | X | X | X | X |
| L3 | X | X | X | X | X | X |
| L4 | X | X | X | X | X | X |
| a | X | X | X | X | X | X |
| Die diameter | X | X | X | X | X | X |
| Diameter of cover after final baking † | X | X | X | X | X | X |
| concentricity † | X | X | X | X | X | X |



DOC C

Specification of the Raw Material for the Cover Formula of EXXXX

| | |
|-----------------------|-----------------------|
| Code of Powder | Name of Powder |
| 1 | X |

Chemical Analysis:

| Element or Component | Min | Max | Typical |
|----------------------|-----|-----|---------|
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |

Grain Size Analysis:

| Micron | Mesh | RCU% |
|--------|------|------|
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |

Bulk Density & Density:

| | Min | Max | Typical |
|---------------------|-----|-----|---------|
| Bulk Density(g/cm3) | X | X | X |
| Density(g/cm3) | X | X | X |

Approved Suppliers:

| Name | Contact info | Origin |
|------|--------------|--------|
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |

Specification of the Raw Material for the Cover Formula of EXXXX

| | |
|-----------------------|-----------------------|
| Code of Powder | Name of Powder |
| 2 | X |

Chemical Analysis:

| Element or Component | Min | Max | Typical |
|----------------------|-----|-----|---------|
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |

Grain Size Analysis:

| Micron | Mesh | RCU% |
|--------|------|------|
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |

Bulk Density & Density:

| | Min | Max | Typical |
|----------------------------------|-----|-----|---------|
| Bulk Density(g/cm ³) | X | X | X |
| Density(g/cm ³) | X | X | X |

Approved Suppliers:

| Name | Contact info | Origin |
|------|--------------|--------|
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |

Specification of the Raw Material for the Cover Formula of EXXX

| | |
|-----------------------|-----------------------|
| Code of Powder | Name of Powder |
| 3 | X |

Chemical Analysis:

| Element or Component | Min | Max | Typical |
|----------------------|-----|-----|---------|
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |

Grain Size Analysis:

| Micron | Mesh | RCU% |
|--------|------|------|
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |

Bulk Density & Density:

| | Min | Max | Typical |
|---------------------|-----|-----|---------|
| Bulk Density(g/cm3) | X | X | X |
| Density(g/cm3) | X | X | X |

Approved Suppliers:

| Name | Contact info | Origin |
|------|--------------|--------|
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |

Specification of the Raw Material for the Cover Formula of EXXXX

| | |
|-----------------------|-----------------------|
| Code of Powder | Name of Powder |
| 4 | X |

Chemical Analysis:

| Element or Component | Min | Max | Typical |
|----------------------|-----|-----|---------|
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |

Grain Size Analysis:

| Micron | Mesh | RCU% |
|--------|------|------|
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |

Bulk Density & Density:

| | Min | Max | Typical |
|----------------------------------|-----|-----|---------|
| Bulk Density(g/cm ³) | X | X | X |
| Density(g/cm ³) | X | X | X |

Approved Suppliers:

| Name | Contact info | Origin |
|------|--------------|--------|
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |

Specification of the Raw Material for the Cover Formula of EXXXX

| | |
|-----------------------|-----------------------|
| Code of Powder | Name of Powder |
| 5 | X |

Chemical Analysis:

| Element or Component | Min | Max | Typical |
|----------------------|-----|-----|---------|
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |

Grain Size Analysis:

| Micron | Mesh | RCU% |
|--------|------|------|
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |

Bulk Density & Density:

| | Min | Max | Typical |
|---------------------|-----|-----|---------|
| Bulk Density(g/cm3) | X | X | X |
| Density(g/cm3) | X | X | X |

Approved Suppliers:

| Name | Contact info | Origin |
|------|--------------|--------|
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |

Specification of the Raw Material for the Cover Formula of EXXX

| | |
|-----------------------|-----------------------|
| Code of Powder | Name of Powder |
| 6 | X |

Chemical Analysis:

| Element or Component | Min | Max | Typical |
|----------------------|-----|-----|---------|
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |

Grain Size Analysis:

| Micron | Mesh | RCU% |
|--------|------|------|
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |

Bulk Density & Density:

| | Min | Max | Typical |
|---------------------|-----|-----|---------|
| Bulk Density(g/cm3) | X | X | X |
| Density(g/cm3) | X | X | X |

Approved Suppliers:

| Name | Contact info | Origin |
|------|--------------|--------|
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |

Specification of the Raw Material for the Cover Formula of EXXXX

| | |
|-----------------------|-----------------------|
| Code of Powder | Name of Powder |
| 7 | X |

Chemical Analysis:

| Element or Component | Min | Max | Typical |
|----------------------|-----|-----|---------|
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |

Grain Size Analysis:

| Micron | Mesh | RCU% |
|--------|------|------|
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |

Bulk Density & Density:

| | Min | Max | Typical |
|---------------------|-----|-----|---------|
| Bulk Density(g/cm3) | X | X | X |
| Density(g/cm3) | X | X | X |

Approved Suppliers:

| Name | Contact info | Origin |
|------|--------------|--------|
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |

Specification of the Raw Material for the Cover Formula of EXXXX

| | |
|-----------------------|-----------------------|
| Code of Powder | Name of Powder |
| 8 | X |

Chemical Analysis:

| Element or Component | Min | Max | Typical |
|----------------------|-----|-----|---------|
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |

Grain Size Analysis:

| Micron | Mesh | RCU% |
|--------|------|------|
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |

Bulk Density & Density:

| | Min | Max | Typical |
|---------------------|-----|-----|---------|
| Bulk Density(g/cm3) | X | X | X |
| Density(g/cm3) | X | X | X |

Approved Suppliers:

| Name | Contact info | Origin |
|------|--------------|--------|
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |

Specification of the Raw Material for the Cover Formula of EXXXX

| | |
|-----------------------|-----------------------|
| Code of Powder | Name of Powder |
| 9 | X |

Chemical Analysis:

| Element or Component | Min | Max | Typical |
|----------------------|-----|-----|---------|
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |

Grain Size Analysis:

| Micron | Mesh | RCU% |
|--------|------|------|
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |

Bulk Density & Density:

| | Min | Max | Typical |
|---------------------|-----|-----|---------|
| Bulk Density(g/cm3) | X | X | X |
| Density(g/cm3) | X | X | X |

Approved Suppliers:

| Name | Contact info | Origin |
|------|--------------|--------|
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |

Specification of the Raw Material for the Cover Formula of EXXX

| | |
|-----------------------|-----------------------|
| Code of Powder | Name of Powder |
| 10 | X |

Chemical Analysis:

| Element or Component | Min | Max | Typical |
|----------------------|-----|-----|---------|
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |

Grain Size Analysis:

| Micron | Mesh | RCU% |
|--------|------|------|
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |

Bulk Density & Density:

| | Min | Max | Typical |
|---------------------|-----|-----|---------|
| Bulk Density(g/cm3) | X | X | X |
| Density(g/cm3) | X | X | X |

Approved Suppliers:

| Name | Contact info | Origin |
|------|--------------|--------|
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |

Specification of the Raw Material for the Cover Formula of EXXX

| Code of Powder | Name of Powder |
|----------------|----------------|
| 11 | X |

Chemical Analysis:

| Element or Component | Min | Max | Typical |
|----------------------|-----|-----|---------|
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |

Grain Size Analysis:

| Micron | Mesh | RCU% |
|--------|------|------|
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |

| | | |
|---|---|---|
| X | X | X |
|---|---|---|

Bulk Density & Density:

| | Min | Max | Typical |
|----------------------------|------------|------------|----------------|
| Bulk Density(g/cm3) | X | X | X |
| Density(g/cm3) | X | X | X |

Approved Suppliers:

| Name | Contact info | Origin |
|-------------|---------------------|---------------|
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |

Specification of the Raw Material for the Cover Formula of EXXXX

| | |
|-----------------------|-----------------------|
| Code of Powder | Name of Powder |
| 12 | X |

Chemical Analysis:

| Element or Component | Min | Max | Typical |
|----------------------|-----|-----|---------|
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |

Grain Size Analysis:

| Micron | Mesh | RCU% |
|--------|------|------|
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |

Bulk Density & Density:

| | Min | Max | Typical |
|---------------------|-----|-----|---------|
| Bulk Density(g/cm3) | X | X | X |
| Density(g/cm3) | X | X | X |

Approved Suppliers:

| Name | Contact info | Origin |
|------|--------------|--------|
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |

Specification of the Raw Material for the Cover Formula of EXXXX

| | |
|-----------------------|-----------------------|
| Code of Powder | Name of Powder |
| 13 | X |

Chemical Analysis:

| Element or Component | Min | Max | Typical |
|----------------------|-----|-----|---------|
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |
| X | X | X | X |

Grain Size Analysis:

| Micron | Mesh | RCU% |
|--------|------|------|
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |

Bulk Density & Density:

| | Min | Max | Typical |
|---------------------|-----|-----|---------|
| Bulk Density(g/cm3) | X | X | X |
| Density(g/cm3) | X | X | X |

Approved Suppliers:

| Name | Contact info | Origin |
|------|--------------|--------|
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |

DOC D

DOC D, 4 PAPER

Tips for the Production of EXXX Based on the Related Know-How









DOC E

DOC E,5 PAPER

**Guide to Quality Tests of EXXX Based on
American Welding Society Standard (AWS
XXXX)**











DOC F

DOC F,9 PAPER

Tips for the Correct Use of Technical Specification Documents



















DOC G

Specification of EXXXX As a Final Product

The EXXXX welding electrode is a versatile, all-position electrode commonly used for general-purpose welding. It is known for its smooth arc characteristics and easy slag removal, making it ideal for welding mild steel and galvanized steel in various applications.

Standard Codes:

| Name of the Standard | Code |
|----------------------|---------|
| AWS/ASME XXXX | EXXXX |
| ENXXX | EXXXXXX |
| DIN XXXX | EXXXXXX |
| ISO XXXX | EXXXXXX |

Chemical Analysis of the Pure Weld Metal:

| Element | Typical% |
|---------|----------|
| X | X |
| X | X |
| X | X |
| X | X |
| X | X |

Mechanical Properties of the Pure Weld Metal:

| | Tensile Strength | Yield Strength | Elongation | Impact test |
|------------------------|------------------|----------------|------------|--------------------|
| Typical Values | X Mpa | X Mpa min | X% min | X Joule Min in X c |
| Warranty Values | X Mpa min | X Mpa min | X% min | X Joule min in X c |

X-Ray Radiographic XX

Position of Welding:

X

Type of Current:

X

Welding Parameters:

| Diameter (mm) | Length(mm) | Amperage(A) |
|---------------|------------|-------------|
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |

Health and Safety:

In terms of the amount of Fume, Spatter, and Radiation Emitted, this product passes the ISO15011 Health and Safety standard.

END